PLATE D.

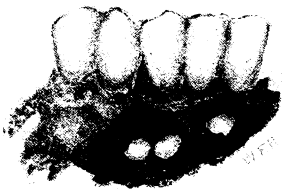

FIG. XVI.

FIG. XVII.

APHTHAE. (b.)

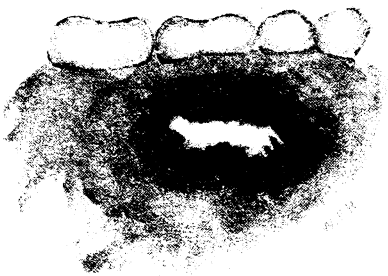

FIG. XVIII.

FIG. XIX.

ULCERATIVE STOMATITIS

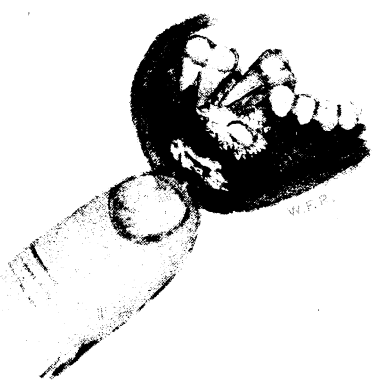

FIG. XX. ALVEOLAR ULCERATIVE STOMATITIS (d.2)

ITEMS OF INTEREST.

VOL. XV. MARCH, 1893. NO. 3.

ORIGINAL COMMUNICATIONS.

ORAL DISEASES;

SURGICAL AND NON-SURGICAL.

By W. F. Rehfuss, D.D.S., and L. Brinkmann, M.D.

[CONTINUED FROM PAGE 70.]

MEMBRANOUS STOMATITIS (DIPHTHERITICA).

In diphtheria, the inflammation extending to the oral mucous membrane results, in comparative rare cases, in the invasion and formation of membranous patches, which may extend over the whole mouth.

This condition is known by several terms, stomatitis diphtheritica (Forcheimer), crouposa, or membranous stomatitis (Allchin).

In the formation of the membrane it is first noticed on the pillars of the fauces, then follows the invasion on the gum in the buccal or labial regions, the lips and tongue. This, however, is variable. In the formation of the membrane a catarrhal stomatitis is always present.

It has been proven by Lœffler, Rajewsky, etc., and mentioned by Forcheimer, that diphtheria cannot be inoculated on a NORMAL mucous membrane.

A pathological change must occur in the membrane before there can be a formation of a diphtheritic membrane. The point at which the membrane is formed, in its development, shows all the characteristic local symptoms of stomatitis catarrhalis. Within the short space of twenty-four hours, the characteristic membrane is formed on the inflamed arc. In appearance, it seems as if a white veil covered the membrane.

The molecular necrosis commences in the mucus and extends outward, whereas in superficial ulcerations produced by caustics, it is the reverse.

Within several days after the formation of the false membrane, portions of it are thrown off by a process of ulceration, leaving the denuded membrane beneath; followed by the ulceration described. If the membrane has been torn off, instead of separating by a natural process, there is a liability to its re-formation.

A slight hemorrhage occurs after this separation of the membrane, which is very unfavorable when more severe.

There is an increased flow of saliva.

Treatment.—The treatment in the majority of cases of membranous stomatitis is practically nil. Extreme cleanliness of the mouth must be observed. If the vital condition of the patient is at a low ebb, and cachexia is present, systemic remedies and tonics are indicated, such as iron, strychnine, quinine, and stimulants to a moderate degree. The teeth should be cleansed several times daily. If the gums are spongy and bleed freely, a mild astringent mouth-wash of tannic and chlorate of potash or sodium, or one of boro-glyceride or glyceride of tannin; alum, or any of this class of astringents may be used with advantage. Caustics should not be applied as they often do more harm than good.

APHTHÆ (STOMATITIS APHTHOSA, FOLLICULAR STOMATITIS).

(Plate D, Figs. xvi–xvii.)

The term aphthæ was indiscriminately applied to and made to include nearly every affection of the mouth. Hippocrates, with whom the term originated, undoubtedly applied it to the disease THRUSH (parasitic stomatitis). Some modern writers (Owen, 1885) have retained this signification of aphthæ. At the present time, the general acceptation of its meaning, first given by Billard (1837), has reference to a form of stomatitis resulting in the formation of characteristic small ulcers. These ulcers vary in size from a pin's head to a quarter of an inch in diameter. In shape they are round or oval, and well defined, having a "punched out" appearance. The floor of the ulcer is grayish-white or yellowish, surrounded by a ground of a livid or bright red color. This redness gradually blends with the surrounding normal tissue. They are generally located in the furrow between the gum and the cheek, on the inner surface of the lips and cheek, or the edges of the tongue. These ulcers appear singly, as shown in Fig. xvii, or in groups of three or more; again, several may coalesce, as in Fig. xvi. In some instances the affection may spread over the whole mouth, but these cases are rare.

Etiology.—Doubt exists as to the origin of this affection. Various views are entertained by writers on the subject, but no

definite cause has been agreed upon and generally accepted. By some it is ascribed to the irritation from dentition, or from objects thrust into the mouth, etc. Miller is inclined to believe its origin due to parasitic causes. A debilitated state of health is a factor in their origin when following an attack of measles, gastro-intestinal catarrh, scarlet fever, etc. Unquestionably, it is dependent upon a remote cause, which may be constitutional or local.

Cases of aphthous stromatitis as a sequelæ of influenza (*la grippe*) have been reported by Widal, Dubois, Lecandey and Leyden. Hugenschmidt has given the subject extensive consideration (*Cosmos*, August, 1892), reporting a number of such cases. We have noted two cases of like origin. There is usually an accompanying gingivitis. This is also noted by Richter (*Cosmos*, November, 1891,) and Hugenschmidt. The latter states that it occurs in the convalescent stage.

It is infectious, as numerous cases are recorded where several members of the same family have contracted the disease.

It commences in a catarrhal stomatitis, the surface of the mucous membrane becoming reddened. This is followed by the formation of a pearl colored vesicle, which either ruptures or wears off, leaving the characteristic ulcer previously described.

General Symptoms.—These ulcers are painful to the touch, and are attended by an increased flow of saliva, which is non-offensive.

Their formation is very rapid, within twenty-four to thirty-six hours; and they disappear within a few days. If one ulceration succeeds the other, it may require ten days or more until they disappear entirely.

In adults, we have noted cases where they have appeared at regular periodical intervals, about every four months, in cases of gastro-intestinal catarrh. In some children there is a tendency to a recurrence of the disease after relapses, but not generally.

Treatment.—Aphthæ has a tendency to become cured without treatment. It generally runs its course, and then disappears. The treatment is the same as that recommended for simple ulcerations, though washes may be given to relieve the pain. Listerine (1–6 or 1–8) is effectual for this purpose, and to prevent infection. Permanganate of potash (0.10 to 15.00), or touch the ulcers with nitrate of silver.

Sulphate of copper (grs. v to x. to aquæ ℥j), sulphate of sodium and glycerine (1–8), sodium sulphite (1–8–12) are recommended.

The authors have found the application of diluted sulphuric acid (aromatic) with a camel's-hair brush beneficial. A wash containing liq. sodii chlor. (1–8–12) is also advised.

Antiseptic mouth washes are especially indicated.

In aphthæ, following influenza, Hugenschmidt advises thymol and boric acid mouth washes, and the application of the following preparation on the gums.

Salol..... 6 grammes
Liquid Vaseline.....40 "
M. Sig.—External use.

HERPES ZOSTER (ZONA OF THE MOUTH).

This disease is an acute inflammatory affection, manifesting itself by the appearance of groups of vesicles along the course of the branches of the fifth cranial nerve and the various spinal nerves.

Herpes zoster occurring in the facial regions, as relating to dentistry, will alone be noted.

HERPES FACIALIS

which is confined to one side of the face, occupies the skin and mucous membrane supplied by the fifth pair of cranial nerves.

HERPES LABRALIS (A FORM OF FACIAL)

occurring on the lips.

HERPATIC STOMATITIS

on the oral mucous membrane usually in the buccal region. (This form is rare).

The development of the lesions is preceded by sensory disturbances, which occur and continue for about three days previous to the inception of the disease.

The pain is sometimes restricted to the area of the inflammation along the whole track of the nerve or nerves. It is a sharp burning, lancinating, and throbbing pain.

In the development of the disease, there are two stages: firstly, that of the invasion, and secondly, the eruption. In the period of eruption, the first manifestation of the disease is a hyperæmic condition of the affected region; rise of temperature and fever; general systemic disturbances may be present; headache; nausea; gastro-intestinal irritation, and, as stated above, pain; an intense neuralgic character affecting the whole region of the fifth nerve.

Hugenschmidt, who has reported two cases of zona of the mouth, states that the fever lasts for three days, and is followed by

the period of eruption. In this stage there is an increase of heat and redness in the part, which is excessively painful to the touch, and very shortly appear herpatic vesicles, with an inflamed base appearing in groups. These vesicles at first are the size of a pin's head, grouped together indiscriminately. In the cases of zona of the mouth reported by Hugenschmidt, the vesicles appeared in the mouth, grouped under the form of a band about one inch and a half in length, and one-half inch broad, in a parallel direction to a line joining the necks of the teeth usually along the course of the nerve in the mouth, the inferior maxillary nerve.

The vesicles may fuse or coalesce. On the lips they are found larger than in the buccal regions.

They are round or oval in shape, globose, or sometimes flat. In structure are more firm than aphthous ulcers, for which they can be mistaken if all diagnostic points are not carefully observed. They contain a yellowish serum, which gradually becomes turbid. After the crops of inflammatory vesicles have formed, the inflammatory condition becomes less severe and subsides. Within five or six days, the vesicles become indurated, or form adherent crusts, which separate, leaving red spots.

As herpes zoster almost invariably appears only on one side of the body, so Hugenschmidt (and the experience of the authors confirms it), has noted that when it occurs in the mouth it is located on one side only, usually the buccal regions. When the eruption appears the pain becomes lessened; however, sometimes it may continue, and even increase, but it is localized in the affected part

This pathological condition is due to certain changes in the nervous system, particularly in the ganglia. The lesions localized in the mouth are due to trophic changes, resulting from a neuritis of the nerve supplying the part.

The direct cause may be produced by wounds, blows, injuries to the nerves, surgical operations, perhaps an ill-fitting, artificial denture, the sharp edges of carious teeth, exposure to cold, etc.

Diagnosis.—This disease may be mistaken for aphthous stomatitis. However, the severe neuralgic pain is characteristic of zona; whereas, in aphthæ, the pains are disseminated, and only apparent on touching the ulceration. Again, the vesicle is more indurated in zona.

Treatment.—The object is to control the pain and protect the eruptions from friction. Locally, cooling and anodyne lotions are indicated and beneficial. Durhing recommends one part of fluid extract of grindella robusta to eight parts of water. Lotions of thymol, listerine, chloral, etc. To protect the vesicles, they should

be painted with a preparation of iodoform and collodion. Muriate tincture of iron is recommended. Constitutionally, quinine or a preparation of iron may be given as a tonic, and antipyrine or phenacetine to control the pain.

STOMACACE (ULCERATIVE STOMATITIS).

(Plate D, Figs. xviii–xxii.)

This is the true form of stomatitis ulcerosa. It is an inflammation of the mucous membrane, resulting in limited ulceration of the gums, or is characterized by a more extensive molecular necrosis of the tissues, which may extend to the periosteum and subsequently produce necrosis of the alveolus.

There are thus recognizable two varieties; one in which the ulceration is limited and appears in various parts of the mouth. Seldom does it commence at the gingivæ. It is non-infectious, and its origin is not parasitic. The second variety may properly be termed alveolar ulcerative stomatitis, commencing as it does on the gingivæ. It is characterized by extensive ulceration of the gums surrounding the teeth, finally, in its serious forms, involving the alveolus. According to Miller, Lingard and Batt, its origin is undoubtedly parasitic. The disease is infectious, as it can be conveyed to different parts of the mouth, and become inoculated as in Fig. xxvi. The lip has become ulcerated from inoculation from the disease in the mouth. These distinctions mark the differences existing between the two varieties.

In the first form (plate D, Fig. xviii), are included simple ulcerations resulting in a superficial grayish or yellowish slough, which is limited to a small area, surrounded by a red areola. These are caused by injuries to the mucous membrane, lowered vitality of the membrane, following a catarrhal stomatitis, irritations from teething; and, in adults, from the broken edges of teeth, improperly adjusted artificial plates and bridge dentures, etc.

The ulcerations produced by chemical destruction of the tissue by acids, such as carbolic, nitric, hydrochloric, chromic, arsenious, etc., may also be included. In this class of ulcerations there is no fetor of the breath.

The ulcerations produced by each acid are distinctly characteristic. Carbolic acid produces a whitish ulceration, may have a slight yellowish tinge; nitric, light yellow; and arsenic acid (plate D, Fig. xix), a pasty yellowish brown. These latter ulcerations are produced by accident or carelessness in the application of arsenious acid to a tooth pulp. A minute portion of the acid may be dropped on the gum. As a consequence, an ulceration of the gum

at that point is the result. It may spread and eventually end in necrosis of the alveolus. Again, a large application of the acid to the pulp may not only devitalize the pulp, but extend to the tissue beyond the pulp canal, producing arsenical pericementitis, and consequent destruction of the tissues, etc. If these conditions are not recognized and properly treated in their earlier stage, the result may be serious. Numbers of these cases are reported. In *Dental Cosmos*, W. S. R. reports a case which occurred in May, 1873. In applying the arsenic, a small portion evidently was forced down on the process, at the gingivæ. This resulted in sloughing and necrosis at that point, the entire alveolar septum between the molars exfoliating, leaving a wide space between them.

The authors can record two cases of limited ulcerations without necrosis, occurring in their own practice.

The treatment consists in cutting away all of the ulceration until the tissue is reached (which responds with sensation to touch), using a lancet excavator, or whatever may best fulfill the purpose. Syringe with tepid water, and then with antiseptic solution, such as listerine, potass. permanganate, etc. A mouth-wash of boric acid, or the following:

℞.—Acidi tannici ..... grs. x
Potass. chlor ..... ℥ij
Aqua ..... f ℥vj
M. Sig.—Use as mouth-wash three times daily.

Differential Diagnosis.—Limited ulcerative stomatitis (plate D, Fig. xviii), may be mistaken for aphthous ulcers; unlike aphthæ, they seldom are round or oval, presenting an irregular, serpiginous or spreading appearance, usually much larger than aphthous ulcers. The "punched out" appearance is not as well marked as in aphthæ. Mucus patches may be mistaken by the inexperienced for the same variety of ulcerative stomatitis. The specific character of the former will decide the nature of the ulcer; also, the patches are slightly raised above the surrounding normal tissue, whereas ulcerations are excoriated.

ALVEOLAR ULCERATIVE STOMATITIS.

(Plate D, Fig. xx; plate E, Fig. xxi.)

This disease always commences on the gums around the teeth, at the gingival margin, and, as stated, results in extensive sloughing, denudation of the roots of the teeth affected, and rapidly involves the surrounding tissue and alveolus. It is frequently mistaken for pyorrhœa alveolaris, and some writers misrepresent these diseases. In its earlier stages it resembles pyorrhœa alveolaris, the gums be-

come swollen and puffy, reddened and slightly ulcerated at their margin. Purulent matter exudes from the gum around the necks of the teeth on pressure. There the resemblance ends.

Etiology.—Opinions are divided as to the predisposing causes of this disease. Some writers are inclined to the belief that it is dependent upon a specific germ, whereas others advance the theory that two factors are necessary, one being systemic, the other local.

As it is generally conceded that mercurial stomatitis is similar to stomatitis ulcerosa (alveolar) in its earlier stage, Forcheimer has assumed, that if mercury, when freely administered until salivation, will produce a stage of ulcerative stomatitis, there must be an analogy as to their causation. In support of the theory he says:

> When mercury is administered and the patient becomes salivated, the oral mucous membrane becomes more or less inflamed. If an irritation already exists, caused by the edges of a carious tooth, depositions of tartar, etc., at such points, the inflammation becomes more intense, and is frequently followed by ulceration.

He further says the process is purely local and the mercurial stomatitis is produced long before systemic reaction has taken place, because of the prolonged administration of mercury. The local effects come from the general system, and the mercury is to be looked upon as the predisposing, as much as the immediate cause. To produce mercurial stomatitis, it is necessary that the membrane be prepared, so that the process itself can be continued. That mercury is the immediate cause cannot be verified, except that it will cause mercurial stomatitis, if administered until salivation will in most instances produce mercurial stomatitis. Hence in the summary of these facts offered by Forcheimer, is shown that there first must be a systemic and a local cause. The local cause cannot be definitely ascertained, but reduces itself to excreted mercury or an infectious agent.

According to Miller, parasitical influences affect the disease, if, indeed, they are not the direct cause thereof. A. Lingard and E. Batt have described a bacilli occurring in the tongue and buccal mucous membrane of a calf having stomatitis ulcerosa. The disease proved capable of transmission (to the rabbit and mouse) by injection of the bacilli. Hygienic surroundings, uncleanliness, poor diet, climatic changes, improper nourishment, are all important factors in the causation of the disease.

The alveolar ulcerative stomatitis (stomacace) is infectious when occurring in the human mouth. It can be communicated when the sore or portion of the virus touches any part of the

PLATE E.

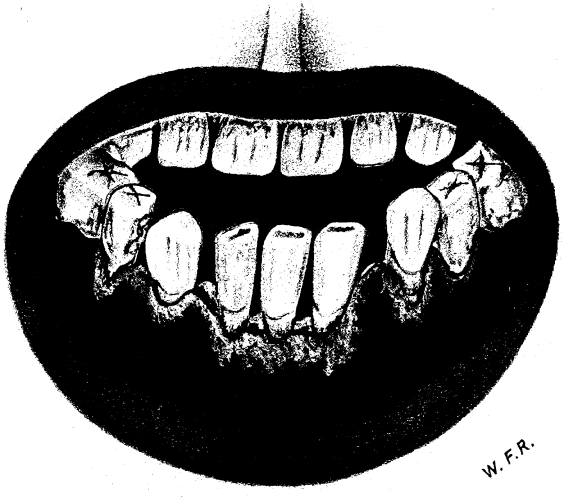

FIG XXI.— ALVEOLAR, ULCERATIVE, STOMATITIS

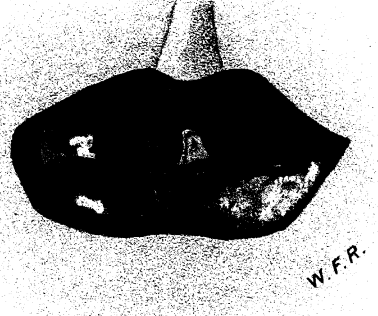

FIG XXII.—LIP INFECTION WITH ULCERATIVE, STOMATITIS

mouth, cheeks, or lips. In plate E, Fig. xxii, is shown infection of the lip in this manner, the disease first developing on gums around the teeth, inoculation of the lower lip following.

Symptomatology.—The inflammation commences as a simple gingivitis at the alveolar margin of the inferior incisors. The inflammation increases, and may extend back toward and involve the bicuspids and molar teeth. The gums become swollen and puffy, not tense or hard. There is considerable hyperæmia, the gums becoming reddened, and later almost livid, bleeding readily. The festoon of the gum around the neck of the tooth is obliterated, becoming everted and detached from the teeth, due to the increased swelling. The gum-pockets thus formed around the teeth are filled with purulent matter. This stage of the disease is similar to pyorrhœa alveolaris. This is followed by destruction of the tissue, which is noted by a yellow seam of ulceration on the border of the swollen gum. This gradually increases, widening into a band until the whole surrounding tissue is involved by infiltration, gradually destroying it and causing extensive sloughing, lying bare the roots of the teeth. Finally, the necrosis of the alveolus extends, involving a large portion of the maxilla, causing a loss of the teeth, and subsequently the necrosed bone sequestrates or must be removed by operation.

Treatment.—Alveolar stomatitis is a serious disease if unchecked by treatment, as the tendency is to spread rather than to heal, and hence it may be a long time before it recovers if its treatment is neglected. There is a liability of its recurrence if this treatment is not continued for a period sufficient to insure its entire recovery. The source of irritation should be removed. In simple cases, the ulcerative stomatitis (plate D, Fig. xxvi), little treatment is necessary, as they tend to heal spontaneously. Mouth washes of chlorate of potassium or sodium, boric acid, listerine, application of dilute nitrate of silver in obstinate ulcerations, glycerole of tannin, etc. In alveolar ulcerative stomatitis, attention must be given to hygiene and diet. Cleanliness of the mouth must be strictly enforced. Removal of all irritations, tartar and roots that may increase the irritation. In a case (plate D, Fig. xx), from Southern Home for Destitute Children, Philadelphia, Pa., it was necessary to remove the temporary molar, which was attached only on the lingual portion of the roots; also a permanent bicuspid, which was but slightly erupted, and the only permanent tooth which had erupted, due alone to ulceration of the tissues exposing the tooth crown. The subsequent treatment consisted of the use

of mouth wash (phenol sodique, 1 part; aqua, 3 parts), three times daily; also application of 3 per cent. solution of nitrate of silver. Mouth washes of hydrogen peroxide (1–3), or a combination of hydrogen peroxide, listerine and water (2–3–5), are effectual. In cases like those from practice shown in plate D, Fig. xxi, the use of chloronated soda (liq. sodæ chlor. ℥i, to aqua ℥viii), as a disinfectant, antiseptic and deodorizer of the foul breath is an effectual remedy. Potass. permanganate (aqua gr. i to ℥i), can be used for the same purpose; also phenol sodique. In extreme cases zinc sulphate (gr. i to aqua ℥i). Potass. chlorate washes (grs. x to aqua ℥i) may be used. Caustics, like nitrate of silver in the solid stick, or of sulphate of copper, should not be used. Painting them with 5 or 10 per cent. solution is advisable.

When the ulceration has infiltrated the tissues, and caused incipient necrosis of the alveolus, a local application of dilute phosphoric acid (1–12) is advised. When necrosis becomes extensive, removal of that portion of the alveolus becomes a necessity.

Internally the administration of potassium chlorate, advocated by Drs. Hunt and West, is effective in ulcerative stomatitis. It is given in amounts of twenty to sixty grains daily, in divided doses, with a few drops of glycerine or syrup, according to age. Care in administration should be observed, as the drug tends to produce anæmia.

Allchin advises preparations which contain potass. chlorate as follows:

℞.—Quinine..... ..... ss to iss.
Solution of perchloride or of pernitrate of iron, ether..... ♏iij to ♏v.
Potassii chloratis..... grs. iij.
Glycerini..... ♏xv.
Aquæ.....ad ℥ij.

The use of cinchona and ammonia is also advised as follows, according to age:

℞.—Spiritus ammoniæ aromaticus..... ♏v to ♏xv.
Ext. cinchonæ liq..... ♏iij.
Infus. cinchonæ..... ad ℥j vel ℥ij.

To be continued.

ARE RUBBER PLATES INJURIOUS?

By James B. Hodgkin, D.D.S.

EDITOR ITEMS:—Your letter to me of —— date, asking for information as to the so-called rubber disease, the injuriousness, if any, of wearing rubber plates, and the remedy for such troubles, is at hand. It is one of a great many such, showing that there is a wide-spread belief that rubber plates are to be regarded with suspicion, and that this distrust is an honest one. I am free to say that I feel sure that the dental profession at large is anxious to have the best thing for their patients, and that if they really come to believe that a rubber, or any other plate is an injurious thing for a patient to wear, they will frankly say so. For I am sure that, as a rule, we are working for the best interests of those who put themselves in our hands for professional treatment.

I have a very vivid remembrance of the advent of rubber plates, as my first initiation into the mysteries of laboratory work was in that line. It had just come in, and my preceptor, an excellent plate-worker—I use the term in the old sense of a metal plate-worker—knew no more about rubber than I, who was just being initiated into its mysteries. It was hailed with joy, as a release from the time-honored die and counter making, the sand-mold making, the rolling-mill and annealing furnace, the blowpipe and charcoal furnace—in a word, all the drudgery that made the laboratory a workshop. For to be absolved from the processes of the metallurgist, and to be furnished with a plastic that could be molded as easily as putty, and have a better fit than any swaging could be hoped to do, was a consummation devoutly to be wished. It certainly was a long step forward in one important direction. It gave to thousands of poor people artificial dentures who could never have hoped to get such under the *régime* of the gold workers. In this respect it was truly a boon.

But the evil came with the good, at least to the dentist who held up the professional standard of excellence in quality, along with its necessary accompaniment, a remunerative fee. So few knew how to make a good gold plate, and the skill necessary to do this was comparatively so rare, that many who might make a fair machinist could not make a success of this part of dentistry. But rubber work was so simple, and its manipulation so easy, that at once a multitude of crude and raw workmen rushed into our ranks —men who could make no other or higher claim to the title of doctor than the ability to construct a plate of hard rubber, held in by

an immense suction cavity, and showing as little skill as possible. Huge signs labeled "Steam Dentist," "Teeth Made in — Hours," "Mended While You Wait," etc., adorned the streets, and wax-work figures performed the very ill-mannered trick of taking out their teeth on the motion of automatic machinery to admiring hoodlums.

Tom, Dick and Harry had left the laboratory where they had hitherto been engaged in the harmless work of cleaning up that usually beplastered place, set up shop for themselves, made plates of rubber at rates that left the ancient metal-worker far behind, and the inevitable results of easy production and cheapness made the laboratory an uninhabited region by the man who prided himself on his skill.

I suppose the evil is not without its good, though that dentistry as a profession was benefited, is gravely doubted by many. But a question very different arises just here. Are there any evils to those who wear them? I suppose I would not be far astray if I were to say that one-half of all those over forty years in this country wear rubber plates.* It is a subject I have not investigated, but I think I am not far from right in this guess. Of these it is an interesting query as to whether any, or many are injured in health in any way by the plate.

So I get back to your questions and the rubber disease. I will not stop to ask if there is such a disease. I think it is conceded by most, and is about as well established as the existence of hydrophobia, or malaria, the existence of both which many stoutly deny. That peculiar softened high-pinkish colored condition of the mucous membrane seen under rubber plates, resembling "half-spoiled beef cut across the grain," is so familiar as to be readily recognizable by all. The congestion is usually of a passive sort, and, as a rule, the patient is not aware of its existence. In many cases it is recognized by its reflex irritation spreading to the fauces, and causing throat trouble.

One of the most remarkable of its peculiarities is that of causing an abnormal absorption of the alveolar ridge. I think this is now well recognized by the profession as an established fact that this absorption is much greater than occurs under metallic plates. As to the cause, I think it is due largely to the rubber being incompatible with the tissues. I may be asked to explain this remark, but frankly say I cannot do so, yet I feel that this is the case. At all events it is a fact that when the rubber plate is re-

*Say one-fortieth.—ED. ITEMS.

moved, and a metallic surface substituted for that in contact with the irritated membrane, the trouble ceases.

Many reasons have been given for the disease called rubber disease. Some think that the vermillion in the plate is poisonous; some claim to prove that free mercury exists in the plate; some that the closeness of the fit causes a mechanical damming up of the follicles, and still others hold that it is none of these, but that the rubber being a non-conductor, the heat of the tissues is, so to speak, penned up, causing irritation.

I have but one opinion about it. It is that the porous condition of the rubber plate, for all, even the best of them, are variably less porous, affords a lodging-place for germs which irritate the tissues. It has been well said that probably no culture field is better fitted for the development of germs than a rubber plate; and of all the dirty things I have ever seen about the mouth an unclean rubber plate is the foulest. And it is remarkable with what perfect innocence the plate is handed to the dentist for repairs, with sufficient food clinging to it to afford materials for a naked-eye analysis of what was had for breakfast and possibly for days past. I am sure that in some cases no part of the plate was in contact with the mucous membrane. Only food. Foul, fermenting, filthy, the whole thing is superlatively dirty. Even in the mouths of the most careful and fastidious patients the rubber plate cannot be kept clean. This condition of affairs is simply impossible with a gold plate. It is only possible where a surface, such as a rubber plate has, presents place for attachment of pasty food, mucus, etc.

This brings us to a question of hygiene. I do not deny that such plates may not be kept cleaner than they are, I only know that as a rule they are not. And is it not true that we must place ourselves under the most favorable conditions for health before we do much toward helping ourselves?

The age for swaged work is past. Much as we who are old may deplore the fact, it is not likely that the old costly work will supplant the newer and cheaper. This being true, we must educate,—and I confess of all the difficult things I ever undertook, this thing of educating the public to an appreciation of hygienic conditions is the most difficult,—we must educate our patients to a realization of the immense importance of cleanliness. But better still, if we can place in their hands, or more properly in their mouths, a denture that is free from the injurious conditions which seem inseparable from rubber, we will have accomplished much. Some smooth ining for the palatal surface, or something that will be like gold,

or gold itself, something so smooth that it can be washed as readily as a porcelain surface. The best plate in this respect is the continuous gum, where it is practical, but it is beyond the reach of most on account of its cost, and its bulk and readiness to fracture is objectionable.

The remedy is in a more perfect polishing of the plate on the surface in contact with the mucous membrane. I think the method in use years ago of covering the plaster model with some metallic substance, preferably tin-foil, was a good one. Indeed, the first vulcanizing was all done in that way. The surface of the model should be coated with some substance that will render it smooth, as liquid silex. A thorough polishing of this surface would help, but this is well-nigh impossible without destroying the accuracy of the fit. The ideal rubber plate, for general use and practice, is undoubtedly the gold-lined plate of the Daly method, or its equivalent. In this we have all the advantages of pure gold,—and it is worth while to consider if pure gold here is not better than the ordinary 18-karat of which most swage plates are made,—in contact with the tissues, and this lining, smooth and solid as a swaged plate, and yet as perfectly adapted to the surface as the rubber. Of all the work I have seen done, none seems to have given greater satisfaction than this. It is sufficiently thick to wear during the ordinary life of a rubber plate, and its perfect polish enables even the most careless washer of plates to keep it clean. In this respect it is the nearest approach to the old-fashioned gold work of our fathers that I have seen. The cost is comparatively small, but even were it not, I have always held that a proper representation of the case to the patient will make all this satisfactory. In this respect it fulfils the tariff ideal, that it is the consumer who pays. I believe that is the doctrine taught, but am not sure but that it is taught both ways.

The method is a very pretty one, as the gold-lined plate is really beautiful, and this is no mean thing to consider. Patients appreciate it, and are willing to pay for it. I may add that an old plate may be lined, in a very simple way, by taking a new impression, scraping away the palatine surface of the old rubber, and adding new. But as I do not propose to do more than answer your question on this subject in a general way, you will excuse me if I do not describe the various processes by which this work is done. I honestly think that the so-called rubber disease is a disease mainly of dirt, and that in so far as we get rid of the occasion the disease will vanish.

P. S.—Right around me, as I write, are not a few specialists in diseases of the throat and alimentary tract, who, without a hint from dentists who might be supposed to be opposed to rubber and cheap work, have diagnosed diseases of the mouth, throat and alimentary canal from palpable signs, and traced, all unassisted by any previous knowledge as to the effects of wearing rubber, these diseases to their real source,—the injurious effects of the plate. And that they were right is proven by the fact that when the rubber was removed from the mouth, or a properly-lined plate substituted, the trouble ceased.

A FEW FINE DEVICES.

By D. W. Barker, D.D.S.

Though the following is a private letter, it contains so many good hints that we publish it in the ITEMS. The cork cones he describes are of various sizes with a hole in the center for the screw of the lathe, the large ones having a metal screw center, the sandpaper is the sharpest, grittiest surface I ever saw. This, and the German silver plate and wire should be in every dental depot. Now, friends, if you write to Dr. Barker for further advice, be sure to enclose fifty cents for samples. Often, when we refer our readers to a genius having something new, he is showered with letters to answer without any compensation.—ED. ITEMS.

By this mail I send you a package containing several things, which in my own practice saves me time, labor and money, and which please accept with my compliments. As Editor of the ITEMS you have placed me under many obligations for useful and valuable hints and information, and I desire in this way to show my appreciation and to reciprocate in so far as I may.

First.—My pet idea is the cork sandpaper cones; they need no explanation. In my hands they have taken the place of the scraper and file in finishing up rubber plates. It is an actual fact that I have not filed or scraped a plate in months; these cones do the work much more rapidly than the file or scraper can do it, and it is done better, there being no gutters or uneven places. As an adjunct, merely to sandpaper a plate after scraping and filing, if one chooses to do that way, they are a great help, saving much time, and presenting a better surface for polishing. The extra strips are, I think, cut about the right size, the biased end should be started in the slit, and a little practice will enable one to wind

the paper smoothly on the cork. If the strip is too long, the ring will join before it gets to the butt of the cork, and if it is too short it will be too loose. These extra strips are made of ruby paper, a very sharp rapid-cutting paper. It also is excellent for making discs from.

Secondly.—The strip of German silver plate: To one who has been educated in orthodox fashion, and has been accustomed to use nothing in the mouth but gold or platinum plate, it is a surprise how much German silver can be used, and in a perfectly proper way, and effect a saving of that much of the more costly metals. A few of such uses may be indicated as follows: For attaching gold clasps to rubber plates by means of German silver lugs, loops, or bars soldered to the clasp; for attaching plate teeth to rubber plates in short bite by means of German silver plate soldered to teeth in the usual way. As backing for plate teeth in ordinary soldered work, the German silver should be entirely covered by the rubber or gold solder. In making regulating devices, it can be used in a great variety of ways for bands, bars, loops, etc.; also for crib work and retaining devices. Dr. Talbot mentions it (*Cosmos*, October, p. 791), but had never seen or used the German silver wire until I sent him some.

Thirdly.—The German silver wire: It has uses similar to the plate for strengthening rubber dentures, to prevent breaking down through the center. In regulating devices it has the advantage over piano wire that it can be soldered to clasps, etc. It is excellent for pins, for crown- and bridge work. This wire and plate is the finest quality made. It is 18 per cent pure silver. It can be soldered with 18k. or 14k. or silver solder, borax or Parr's flux. No care is needed in soldering, as it is almost impossible to *burn* it under the blow pipe (I have never succeeded in doing so, and I've tried several times with a powerful blow pipe). Rubber hardens perfectly and solidly in contact with it (which it does not do in contact with some metals). If you will give it a trial for such uses as above indicated, I am sure you will like it. It will not disappoint you. Should you desire more I shall be happy to supply you, as I have quite a quantity, and it is inexpensive. One advertiser is willing to sell it at $1.00 an ounce, it is worth about 75 cents a pound. I should add that after soldering, the German silver cleans up nicely in sulphuric acid, just the same as gold plate, and takes a beautiful polish, if desired.

NEW DENTAL COLLEGE IN NEW YORK.

By Dr. G. L. Curtis.

It seems a pity that New York City, with all its advantages and wealth, and its population of nearly 3,000,000 of people, should rank as the very lowest in the dental world. It has but one dental college, while its rival cities have from three to eight. We are glad to see that some of New York's able men are for an advance. After three years' hard work we are about to have a New York Dental School worthy in all respects of the great city, and one of the finest in the world.

A very commodious and suitable building has been selected, and some of the best men from this country and Europe are considering the professorships.

The trustees and incorporators consist of both professional and business men, so that the financial arrangements of the school will be as well looked after as the professional. The charter for this institution was granted by the Regents of the University of the State of New York in June, 1892. It will open with a spring course in April, and with very bright prospects. Already thirty students have signified their intention of attending. The infirmary practice will continue all summer, thus giving the students many advantages. The regular lectures will begin next October.

Students desiring to enter are required to pass a regular medical preliminary examination, as prescribed by the Board of Regents of the State of New York, excepting those who have already been at some other college, and then they will be entered as their certificates merit. There will be a staff of about fifty teachers, instead of the usual small number of ten or fifteen, and each branch will be taught by from three to eight men who are all renowned from a scientific and practical standpoint.

The curriculum will be made on a high educational basis, and while covering the entire field of dentistry, will also contain everything in medicine that can be directly applied to our science or art. The medical studies though will be given at one of our best regular medical colleges, and arrangements will be made whereby students desiring to take the Medical Degree can do so with one year's extra course, though in the meantime extra medical lectures will have to be attended. The final examinations will also be conducted by the Board of Regents instead of by the teachers, as is generally done, and by this means it is hoped that a better class of men and dentists will be given to the profession.

CURE OF NECROSIS IN THE LOWER MAXILLA.

By T. E. Lee, M.D., D.D.S.

On the 2d of April, 1890, Bridget Clancy came to my office. Dr. A., her physician, had sent her to Dr. B., a very prominent surgeon, for advice, who in turn directed her to a dentist to have teeth extracted preparatory to having a portion of the lower jaw removed.

I learned from her the following history of the case: About the 1st of June, 1889, a large swelling appeared about one inch to the left of the symphysis of the lower maxilla. This swelling was lanced by her physician, Dr. A., who, according to the girl's statement, pronounced it a disease of the blood. I found the girl to be of a tuberculous diathesis.

After the lancing by Dr. A. a fistulous opening resulted externally. This was treated by poulticing, cauterization, and internal or constitutional treatment from June, 1889, to April, 1890. She said that Dr. A. asserted the trouble could not possibly be from her teeth, as it was too low down on her chin. She was finally taken to Dr. B., who discovered that a large portion of the left half of the bone was necrosed, and said it would have to be removed. Carefully examining her mouth, I found the left lower cuspid and first bicuspid badly decayed with foul and decomposed pulps. The mucous membrane covering their fangs, and that in the immediate vicinity, was very much inflamed and punctured by a number of small ragged openings. The ragged edges were of proud flesh. A probe could be introduced into any of them to a considerable distance, without causing any pain. On the external surface of the chin and lower portion of the face somewhat similar conditions were seen. There was considerable inflammation and swelling. The large fistulous opening, and at least five smaller, the latter very similar to those found on the mucous membrane over the roots. The bone at these points seemed to be completely honeycombed. Still there was no evidence of a loosened sequestrum. I anesthetized the patient, and extracted the two teeth described above, whose foul and poisonous pulps had caused all the trouble by percolating through the apices of the roots into the bone. The poor girl had been so deeply impressed by the belief that she would have to lose a part of her jaw, she actually dreamed, while under the anesthetic, it was being removed.

I undertook the treatment of the case. I at once syringed very warm carbolized water through the teeth sockets and fistula. Very easily done, for on syringing the sockets the water came

through the opening on the chin and *vice versa*. I ordered the application of flax seed meal poultice, to reduce the inflammation and swelling; had her return to the office about every third day for the warm water treatment, with which I sometimes used listerin instead of carbolic acid. The water was forced through, so as to perfectly clean all accessible parts. She was directed to bathe the parts freely in warm water each night before retiring. The largest external opening was drained by means of twisted cotton for about one week. The poultices were applied four times. In the process of healing, several flaps of callus skin were left, giving rather a ragged appearance to the scar. These were clipped off closely with scissors. After having been under treatment about four weeks, the girl met with an accident by receiving a severe blow on that portion of her chin, which no doubt somewhat retarded the progress to cure. I will state I painted the parts, both externally and on the mucous membrane, frequently with equal parts of aconit, iodin and chloroform, and gave her the following as a tonic internally:

℞.—Quinia sulphatis..... ℈j.
Ferri oxalati..... ℈ij.
Ext. nucis vomicæ..... gr. v.
M. et ft. in pil. xx.
Sig. One an hour after each meal.

At the expiration of ten weeks I discharged her cured. The fistulous opening healing prettily, only a small dimple being left as a scar, and that almost out of sight under the chin. The case had gone on nearly a year before coming to me.

The right lower cuspid and first bicuspid were also abscessed. The first I treated and filled, the latter I extracted.

POPE LEO XIII ON DENTISTS.—Amid his spiritual preoccupation the present Pope seems to have neglected his "pillars of the mouth," as the Arabs call them, and as a result two of his teeth becoming carious have been occasioning severe pain. The advice of his body physician was that the offending "grinders" be removed. The Pope gave his assent to the eviction of these troublesome tenants, but with the condition that this be done by an experienced *practitioner*, "not a dentist who is mostly educated only theoretically." Consequently a "tooth puller" (barber) was invited, who by his dexterity succeeded in relieving the Holy Father of his trouble.

CURRENT THOUGHTS.

ITEMS OF INTEREST.

By Dr. J. C. Templeton.

INSTRUMENT POLISHER.

Burnishers give better results when new than when tarnished, therefore it is well to keep them finely polished. In fact, it is desirable to keep all instruments polished. An efficient device for polishing can be made by fastening a piece of sole leather, or a piece of razor strop, on a block of wood of suitable size, and placing a little diamantine powder on the surface of the leather; then polish instruments by rubbing briskly on this surface. Diamantine is used by jewelers and can be obtained from them or from their supply houses.

TO MAKE MOISTURE-TIGHT GUTTA-PERCHA FILLINGS.

Dissolve rosin in chloroform to desired thickness; place some of this in the prepared cavity, and by the time the gutta-percha is heated the varnish will be in proper condition through evaporation of the chloroform. The varnish should not extend to the cavity margins. Apply the gutta-percha as usual, and pack with cold instruments. The cold instruments do not adhere as warm ones do. When completed the filling may be pared off to the proper contour by means of a heated thin-blade instrument, and the filling smoothed by the application of eucalyptol or oil of cajuput.

TO DUPLICATE MODELS AND IMPRESSIONS.

Take printers' roller composition, melt in a water-bath till dissolved. Grease the model slightly with lard, and place it the same as if to mold a metal die, in a metal ring (a tin can opened at both ends will do), and pour the melted composition over the model. Let this stand over night. By morning the material is hardened and the model can be withdrawn. The composition being elastic it retains its shape, and a hundred models may be poured if necessary. Impressions may be duplicated in the same manner, by using impression instead of model.

A USEFUL CLAMP.

Where the lower teeth have short and tapering crowns, and it is impossible to make an ordinary clamp hold, use the Lyder clamp, and you will be successful.

TO DRY A CAVITY BEFORE FILLING.

After applying absolute alcohol to the cavity, use a solution of sandarach and ether to line the cavity; dry this with hot air, which forces it into the ends of the tubules, completely sealing them; then proceed with the filling.

IN LIGATING RUBBER-DAM,

tie a small bead on the ligature, which, when tied around the tooth, will prevent the dam from coming over ligature; the bead should be on the lingual side of tooth.

IN ARTICULATING TEETH,

always take an impression of lower teeth when making an upper set, and in taking the bite have wax trimmed to show the length you wish the teeth to be, and bite into it just sufficiently to show the tips of cutting edges and cusps where the model made from lower impression can be placed in proper position. For double sets, make wax models for contour in restoration of features and to show length of teeth, and then try these models in the mouth, being careful to see that you have it right; then make plaster articulating models for setting up the teeth, setting up the lower ones first against a plaster articulating plate, its articulating surface corresponding with the articulating surface of lower wax model, then lay aside the plaster articulating plate and put the model of upper jaw in its place, and set the upper teeth to the lower ones. I adopted this method about twenty-four years ago, and in that length of time have not had to grind a cusp off to let front teeth come together, and can say the same for the method of making an upper set alone, which is all due to the care taken to get a correct bite in such cases by taking an impression of lower teeth, which takes a little more time, but is all remunerated in the satisfaction from seeing that there is nothing more to do when the piece is placed in the mouth with masticating surfaces perfect, and no need of any "grinding in" to get the front teeth together.

TO PREVENT PLASTER ADHERING TO RUBBER PLATES.

Coat the model with a thin solution of soap and water just before packing the case.

A METHOD FOR SECURING PERFCT IMPRESSIONS FOR PARTIAL UPPER PLATES.

To take an accurate impression of the mouth for a partial upper set of teeth, smear plaster over the roof of the mouth

with the finger, take a string about one foot in length, tie the ends together, put the tied end of the loop into the plaster on the roof of the mouth, and add more plaster to thoroughly imbed the knot, leaving the loop of string hanging down. In placing the plaster in the mouth care should be taken to have it come fully half way over the grinding surfaces of molars and bicuspids and cutting edges of the front teeth, then trim the plaster and varnish the trimmed surfaces. The plaster should be so trimmed that it will fill up fully half of all spaces between the teeth, then cover all the remaining surface of the mouth and teeth with plaster, being very careful to have the teeth well covered and spaces filled in putting on plaster for the buccal and labial surfaces. When set, the plaster impression readily parts where it has been varnished, the palatal portion is dislodged with the help of the string used, and the pieces are then placed together and model made. If a tooth is irregular, use modeling compound about it and trim suitably; then apply the plaster. When removing, it breaks where joined; then remove compound, place in position in the impression and pour the model.

Ohio Journal.

RESTORING THE BITE WITH GOLD CROWNS.

By Dr. H. W. Arthur.

Great stress is constantly laid on the careful fitting of the band; this is altogether proper, but *any* bite will do, judging from observation, so that it does not interfere with the occlusion of the other teeth. Apart from the importance to the patient of having the bite *restored*, which is accomplished by this method, the force is in the right direction, and there is no leverage exerted which has a tendency to loosen the crown and, it may be, expand a well-fitted band.

Having the band fitted and not interfering with the occlusion of the teeth, the bite is taken, preferably with modeling composition, which can be hardened with cold water while in the mouth, so that the band can be replaced exactly, should it not draw out with the impression. When in the articulator it should be an exact working bite. Place sufficient wax in the band, now in the articulator, and close; this will give the bite in the wax; trim to the band, and give such artistic shape as desired, being careful to leave the bite proper intact. Remove from the articulator (this by the way, can be done more readily if the band be filled with wax, leaving only a slight rim, before placing in the articulator).

Take rubber hose about an inch in length and the same in diameter; obstruct the lower half, mix and fill the upper half with Teague's Impression Compound, while in a creamy state, and imbed the wax bite till it slightly covers the band. If the depression in the bite is deep, it may be well to place a little of the compound in it first, to avoid having an air space. When set, the band and wax bite is removed, and the compound thoroughly dried. This can be quickly done by putting it into a melting-ladle. A change of shade all over will indicate that the moisture has been driven off. Using the rubber ring, dies are made of Melotte's fusible metal. These should be exact and well defined.

A piece of thin, pure gold plate, of sufficient size, is pressed by the fingers, and burnished on the male die, the corners clipped, ends folded in and the sides over, to prevent drawing the gold over the cusps. Strike up once on the dies, and trim off the surplus with light scissors. Place all the parts in the articulator, gold cap bite over the wax bite, close the articulator with slight pressure, burnish the cap down around the band and make sure that it is exactly in place. A trifle of flux wax may be placed where the cap and band meet. Invest, allowing the investment to touch the band at one or more points, so that should it be displaced when the wax is being removed from the inside, it may be exactly replaced. Solder and finish.

Any slight error in manipulation can be noted by placing in the articulator, and can be corrected before placing it in the mouth.

Ohio Journal.

PERFECT OCCLUDING GOLD CROWNS.—Among the various expedients the following may suffice:

Fit the band to the root and trim on the occluding edges, with a flat file, to line where side walls begin to curve on occluding surface. Return the band to the root and fill to overflowing with plaster Paris well mixed so as to set quickly. Have patient close the teeth naturally. When plaster is hard, remove band and trim, so as to make presentable surface, retaining the imprint of the occluding cusps. Use this model for making an impression in Melotte moldene, from which make a fusible metal die. Perfectly adjust to the band the resulting swaged cap, and solder.

Another way. Fill the band with moldene or plaster and proceed to get "bite" as before, then insert this model into fusible metal almost cold, and drive gold plate into this mold with lead.

Dr. W. H. Whitslar.

ABSCESSED TEETH.

Discussion in the N. Y. Odontological Society.

Dr. J. N. Farrar uses non-escharotic creosote in the treatment of pulpless teeth that are not associated with abscesses—wood creosote in combination with alcohol. The object of the alcohol is to enable the creosote to act in the presence of aqueous moisture, if there should be any in the tooth.

J. N. Farrar says: The plan of drying teeth with hot air is excellent, but I think bibulous paper will extract about as much water as the heating process, unless this is kept up for a long time. I do not regard moisture in the dentine as injurious to the tooth, but the pulp canal should be dry. If there are no abscess, I fill the canal at the first sitting, if I have time. If I do not, I close it tightly. The great trouble with many dentists is that they fill temporarily with cotton saturated with some kind of drug, and then do not seal tight the canal. It should be sealed with something that will prevent any kind of micro-organisms from entering. I use phosphate of zinc cement over the cotton. When permanently filling a pulp canal I generally plug the apex with gold. What is needed is a small wad of indestructible substance.

Nature is our best guide in the treatment of an abscess. She makes a fistulous drainage from the socket. Drilling through the gums and socket, to the interior of the trouble, is the only scientific plan of treatment. I derived so much benefit from this treatment that in 1878 I gave a course of lectures on it at two colleges.

The ragged bone is generally necrosed bone. After an abscess has found vent through the side of the socket, the sac changes in its character. It hardens, in a measure disappears, and if the alveolar process behind the sac is deprived of its nutrient supplies it dies, and the sac dies in consequence, leaving a chamber filled with liquid substance. I call these cases sepulchral abscesses. The proper treatment, of course, is to go in there, and cut all the dead part out; cut with a sharp bur till the healthy tissue is reached; sometimes, however, it is difficult, if not impossible, to get all the dead bone out. In such instances there may be a temporary relief. Even if there is left some carious bone, it may, after a time, die—become necrosed.

Sometimes the end of the root projecting into this cavernous place itself takes on a degenerative condition. In fact, often the ends of these roots are rotten. These formerly plagued me much. Once I had a case that was favorable to amputate the root, and I

did so. Of course that left the opening into the pulp chamber enlarged, so that it had to be filled with gold wire to make it tight; but it cured the abscess, and since that time the amputation of roots has, with me, been a common practice.

Concerning creosote as a remedy, I look on it in this way: If a sore is on the outside, an ulcer, we would not use creosote, nor would we use creosote in a flesh abscess just under the surface; we might perhaps wash it with something mild, such as castle soap and water, but with bone abscesses we are dealing with something different. Iodine preparations are disagreeable because they discolor, but they otherwise do very well. I think it is proper to cauterize the interior of a sac. Of course there is no such thing as a "pyogenic membrane," but there is a sluggish surface which should be removed. When this is destroyed, and the parts are treated with some simple liquid, such as salt and water, injected every day or two till that degenerated substance is all driven out, and the contents are prevented from becoming rancid by continuing injections of salt and water, Labarraque's solution, or wood creosote and alcohol (which is non-escharotic) once in five or seven days, it will generally be followed by healthy granulations and a cure. For cauterization of a sac I have found escharotic creosote (coal tar creosote), or sulphate of zinc, as effective as anything. Either pump it through the canal of the tooth till it appears at the mouth of the fistula, or inject it through the fistula with a syringe.

Dr. Darby, of Philadelphia: Creosote and carbolic acid have been used in dentistry from time immemorial. Especially is this true of creosote, and, though it is not absolutely essential in a dental practice, it certainly has served, and is still serving, a very good purpose in the treatment of devitalized teeth and chronic alveolar abscess. We all know that many a sac at the apex of a root has been broken up, and a fistula healed by the escharotic effect of good creosote. The same may be said of carbolic acid. There may be better remedies than either, still I am not yet prepared to abandon good English creosote made by Squores, of London.

Hot air for drying the canals of teeth, to be effective, must have pressure behind it to force it into the root of the tooth. Some years ago I put into my laboratory an apparatus for giving me compressed air. It consists of the following:

A cylinder, made of galvanized iron, holding a hundred gallons, with a pipe running to my office, and at its end a gauge to denote the number of pounds pressure. A stop-cock within reach of the chair and a rubber tubing reaching to the mouth of the patient,

with a Taft hot-air syringe, and a little spring cut off, to be held in the hand. In the laboratory, in close proximity to the cylinder, is an air-pump, and each morning the man pumps into this cylinder compressed air, from five to thirty pounds. By simply holding the bulb of my Taft hot-air syringe in the flame of my small Benson burner, I can have any degree of heat desired, and sufficient pressure back of it to force it into the root of the tooth.

To me this apparatus has been almost invaluable, as I am enabled to dry a tooth more thoroughly than I have ever been able to do in any other way.

When opening a devitalized tooth, in which I suspect septic conditions, my practice is to put into the pulp chamber a few crystals of the permanganate of potassium, and then washing it with its solution, after which I dry it with the hot-air blast, then wash it with absolute alcohol, and dry it this time with as much heat as the patient will endure.

Cotton has been recommended as a root filling, and in Philadelphia there are some who must believe in it, for they certainly use it a great deal. I have often removed cotton from the roots of teeth years after it had been put there, and the roots seemed in a healthy condition, and the cotton was not decomposed.

Drilling through the end of the root for relief in acute abscess is not often attended with pleasing result. My own experience and observation teaches me that the practice is a bad one, and leads to difficulty when it becomes desirable to find the root. But I do not believe in cutting or drilling through the alveolar process. This may do very well for the six anterior teeth, or for teeth with a single root, where the length can be ascertained, but when the abscess is at the apex of a double- or triple-rooted tooth the operation is too uncertain.

The first step is the thorough removal of the entire pulp *débris*, without which it is impossible to fill the canal properly. The opening up of the canal is best done in most cases with the flexible engine drill. There are comparatively few roots which cannot be opened up by this means to the very end; in the few which cannot, a fine flexible probe of piano wire, lubricated with a drop or two of carbolic acid, can be passed, with a little force, nearly, if not quite, to the apical foramen. The only exceptions to the rule to open the canal its entire length are those where the root is extremely crooked, rendering perforation likely, and those in which calcification has taken place. In the young the root canals are much larger than in older persons, and there is, therefore, greater necessity for opening

the canal freely. Too many operators make the fatal mistake of not cutting away sufficient of the tooth to allow the drilling to be done on a line parallel to the direction of the root.

The next step is the perfect cleansing of the canal. Simply forcing the ground-up dentine out by means of an air or water syringe, and then swabbing with cotton pushed into the canal as far as the probe usually employed will carry it, will not answer. That is not perfect cleansing, and is far different from what I mean. Too few dentists, I am afraid, have the proper instruments for accomplishing what I wish understood by perfect cleanliness, which is a task requiring time and patience.

My method is, first, to prevent, as far as possible, the entrance of moisture into the canal during the drilling; then, having desiccated the powdered bone with a blast of hot, dry air, I work into the canal with a rotary movement a delicate, tapering probe, frequently withdrawing it to carry out the power adhering to its sides. This procedure is continued till the powder is completely removed. The hot blast is then again applied till the patient complains of discomfort from the heat, when Darby paper-points are used to ascertain if there is any moisture remaining at the extremity of the canal. Sometimes it will occur that serum or blood oozes from the vessels at the end of the root, and finds its way back into the canal, a fact which can be only ascertained by the measure just noted, unless the exudation is considerable. (When the apical foramen is large, or the root not fully developed, as in the teeth of young persons, it is difficult to check the extravasation of blood, requiring delicate surgical treatment to heal the wound before the filling of the canal should be attempted. When the filling is inserted, precaution must be taken against too much pressure on the freshly-healed surface, or the wound may reopen and complications follow.) With the tooth dried as far as the heat will penetrate, the remaining moisture in the canaliculi is absorbed, and the canal is ready for filling, unless the pulp is putrescent, the treatment in which case will be stated further on.

For filling root canals I have tried cotton, gold, amalgam, and cement, and long since discarded them, because, in my judgment, it was not possible to do perfect work with them. Not one of those mentioned can be made to enter and fill the canaliculi, which is an important part of the operation, as lessening the possibilities of the decomposition of the animal matter of the dentine. Nor can any one of them, in my judgment, be perfectly adapted to the walls, with the possible exception of cases where the roots are straight,

and short, and can be freely reamed out. I therefore use chlora-percha.

My method of introducing the chlora-percha is to flood the canal with chloroform, and, placing the patient in a position which will assist in the expulsion of air from the tooth, work the chloroform with a delicate probe to the end of the root. The thorough diffusion of the chloroform is, I believe, greatly assisted by capillary attraction, owing to the extreme dryness of the tooth. This is immediately followed by the introduction of gutta-percha canal-points, which, by the aid of a to-and-fro motion, are dissolved in the chloroform along their entire length, forming the chlora-percha, which is distributed into every portion of the interior of the root accessible. Point after point is forced in, and placed in this manner, till the entire canal and the open canaliculi are filled with the chlora-percha.

I employ this method in all devitalized teeth, providing, of course, where the pulp is putrescent, for its deodorization and sterilization. This, however, is a simple task; hot water and hot air are usually sufficient, few, if any, medicaments being required. When pericemental inflammation exists, I prefer the tincture of iodine to any other dressing, though some of the derivatives of this drug, as iodoform, aristol, etc., will accomplish perhaps equally good results by longer application. I see no necessity for the use of carbolic acid or creosote in the treatment of this condition, except to avoid a greater and more obnoxious odor.

I am opposed to treating alveolar abscess in any other way than by a positive and accurate procedure,—amputating the root, etc.

For years I relied on therapeutic measures, among them the injection of carbolic acid and creosote, though I employed the latter very rarely, partly because of its objectionable odor and partly because of my belief that carbolic acid was better. It was generally necessary to enlarge the apical foramen and force the medicine through, in the hope that its escharotic effect would destroy the sac and fistula, and thus the disease eventually disappear. Usually this method consumed much time, and only those that could well afford the luxury of such treatment received it. Great care is required in the use of carbolic acid lest it should accidentally come in contact with the gum. I have not infrequently observed much damage to the alveolus following its employment.

Early in my practice I realized the importance of positive surgical treatment in alveolar abscess, and for eight years I have em-

ployed that method almost exclusively, and, I am glad to say, with general success.

After the root has been cleansed and filled as before described, the next step is to complete the filling of the cavity in the tooth. This should be a permanent operation, as the tooth is never again to be opened. A local or general anesthetic is now resorted to, as the patient or the case requires. If the fistula exists, the probe usually leads directly into the sac or the excavation in the alveolus, which is invariably present. If there is no fistula, or if it is at some distance from the seat of trouble, a direct opening into the sac must be made. For this purpose I prefer a spear-pointed drill which is thrust through the gum and alveolus in a direct line with the root. Practice and delicacy of touch shows where to drill and when to stop. A rose bur of suitable size is now inserted and rapidly revolved, to cut away the sac and necrosed bone. If the apex of the root it necrosed, it is likewise burred away, or if the necrosis is extensive, so much of the root is amputated as is necessary.

Amputation usually requires a larger opening through the wall of the alveolus, and in extreme cases a flap of the gum and alveolus is turned back to allow room for the saw and for the removal of the diseased tissue. Then cleanse the cavity and check the hemorrhage. Hot water injections will usually stop the bleeding, when an opportunity is afforded for ocular examination. Sterilize the wound, and if it is large, pack with antiseptic lint, continuing the dressing till no longer necessary. The antiseptic dressing may consist of injections of suitable solutions to aid in the healing of the parts.

If the operation has been inconsiderable, the wound may be left entirely alone after injecting with hot water and removing the *débris*, with the expectation of a cure. Even a fistula at some distance, necessitating a false opening into the sac, requires little treatment and soon disappears.

Generally the amputation can be accomplished at the time the root is filled, but to impress on you the importance of immediately curing all classes of abscess with fistulous opening, it is only necessary to remind you that wherever found they are usually tubercular. If the antrum or nares is penetrated by a fistula, special treatment is commonly necessary.

I believe the root canal should never be left open, because so long as it remains open, resolution at the end of the root is practically impossible, owing to septic influence at the base of the newly-formed tissue, which again breaks down, unless the risk is provided

against by immediate filling. To enlarge the apical foramen is complicating, by rendering more difficult the adaptation of a perfect filling, besides endangering the integrity of the new tissue by the likelihood of the filling material being forced beyond the root apex.

The operation of alveolotomy, as this process is called, is to my mind, based on a rational view of health and disease. An abscess is nature's way of getting rid of a disturbing influence, and often considerable damage to the surrounding parts and great suffering to the patient are the outcome of her efforts to dislodge the intruder. The indication is, therefore, to assist nature by removing the affected tissue which cannot be restored to health and usefulness. My vote is, therefore, for surgical procedures in both acute and chronic alveolar abscess,—some differences in the care of the two forms are required,—because experience has taught me that it is the best and quickest method to assist nature to assert herself.

Dr. Crouse, of Chicago: These surgical dentists, these men who get surgery chronic in their minds, think that the only way of doing anything is by a surgical operation. If there is any place I would steer my patients clear of, it is the office of one of these surgeons,—the one who thinks his work is to cut and slash all the time.

The trouble with surgical dentists is that they work at the wrong end. I have treated a great number of alveolar abscesses, and I have never found but three which did not get well with the treatment I will describe.

I happen to be in a field of colleges always productive of a great deal of surgery. We have five or six colleges in active operation. Do you not pity the patients when they have to submit to so many surgical operations a day? A law prohibiting dental surgeons or surgical dentists from operating, I think, would be a good thing. It might be a hardship to those who want to practice, but it would be a great blessing to the dear people.

What is the treatment I advocate? It is simple, especially simple since we have the rubber-dam, and can dry out the tooth and prevent the medicine from coming in contact with the tissues. What is the operation? Prepare your cavity; it is not necessary to give the details, except that care must be taken not to force the broach into the pulp canal, or get the cavity clogged with foreign matter; take a piece of soft India-rubber, cut it as near the size and shape of the cavity as you can; fill the cavity with carbolic acid, place the India-rubber into the cavity, and with it force the

carbolic acid out through the fistulous opening. This is readily done with a blunt instrument and sudden force against the rubber, such force as is used in packing gold by hand-pressure. In my hands this has been the most effectual way of accomplishing the treatment. One such treatment is generally sufficient.

The frequent treatments described by the former speaker as being a luxury I am inclined to think my patients would not enjoy. I may be mistaken, and if I thought they wanted the pleasure of coming often and going through all that surgery, I do not know but I could work myself up to it.

Dr. Darby spoke of a class of cases where the pulp died under an oxychloride cap, and the root was found to be dry. In such cases I think the ends of the roots become encysted, and it is better to leave them alone than to treat them.

Dr. Van Woert: When you want to be certain, you must accept the inevitable, and fall back on this old reliable agent, carbolic acid.

We are all ready to hail with delight anything that may possibly do away with the use of this offensive drug, but as yet there has been nothing presented, to my knowledge, that can take its place. Carbolic acid has made a reputation for itself that I fear it will be hard to kill. My experience with the substitutes offered, so far, has been anything but satisfactory, and I am confident that Dr. Porter will regret it if he abandons its use.

I can see no reason for leaving the root canal open. After freeing it from the septic matter with which it is clogged, it is my practice to fill at once.

I am a strong advocate of immediate root filling in all cases, for the following reasons: When a case of apical pericementitis presents itself, or any of the difficulties following, it is plain that such is the result of one of two causes—either mechanical injury or the presence of septic matter in the roots. If the latter, by removing the cause and restoring the parts to a thoroughly aseptic condition, nature, in ninety-nine out of a hundred cases, will take up the fight and set matters straight without the aid of surgery or medicaments.

The enlargement of the apical foramen I consider, as a rule, a bad practice, but there are cases where it is permissible and even advisable. The extraction and replanting of the tooth is at times really necessary; for instance, in excessive curvatures or malformations of the roots.

I am a little surprised at his reasons for performing alveolotomy. I did not suppose there were any in this advanced age

of surgery who would wait for the disease to produce a fistulous opening.

I fail to quite understand his reasons for surgical treatment in chronic abscess after the canal has been filled. If he means that no medicament whatever is to be used, I cannot agree with him. On the contrary, should he mean that by gaining access for evacuating the sac by surgical means, after which medicaments are used for the treatment of the case, I fully concur with him.

The following is what I use: Iodol, 10 grains; oxide zinc, 20 grains; oil cinnamon, 5 drops; carbolate of vaseline, a sufficient quantity to form a stiff paste at 140°.

This paste is so thick and dense that it can be rolled into shape very similar to the gutta-percha points manufactured for filling root canals. It is immaterial what the temperature of the surrounding parts may be, you cannot get inflammation enough to cause the least change of the vaselin, a difficulty which I had in the beginning from macerating the mixture cold.

Another useful remedy of great service in acute pericementitis is: One part tr. capsicum to two parts vin. opii.

This, applied on absorbent cotton, a small piece of felt, or blotting paper, will relieve pain quicker than any local application I have ever tried.

Let me add one more word in favor of carbolic acid. In my opinion, sustained by a long experience, carbolic acid is the one of all drugs the results from which you can depend on. There has been a number of theories advanced for discarding it, one of which is the coagulation of albumen in the roots; and yet, notwithstanding this, the effect is satisfactory; and till we can prove all that is brought against it, we had best stand by it as an old friend.

International.

THE OFFICE.—We cannot be too careful in practice to have our operating- and waiting-room suitably furnished; the appearance of quietly and harmoniously decorated rooms have a wondrously soothing effect on patients of all temperaments. The rooms should not be too luxuriantly furnished, for I have heard patients, when speaking of such houses, say they knew the fees they pay are in direct ratio to the elegance of the appointments. We should not, however, go too far to the other extreme, and let the rooms become shabby or show an absence of finish.

Dr. Geo. Northcroft, in Dental Record.

THE KEELEY TREATMENT.

While a patient at the Keeley Institute, at Lancaster, you published a line from me. Now, I will further report results.

You assert that after a discontinuance of the treatment, the appetite for liquor may return. I began on ale, at the age of five years it awoke a craving which lasted until January 15th last, when I took my last drink at the Keeley Institute—" forty-seven years of the disease."

Graduated February 4th. Am pensioned for disease of stomach and resultant nervous debility. Nervous system shattered. Never abused myself with alcohol, but used it for its supposed tonic effects. At last, however, as is always the case, the habit grew beyond control. Came home broken down with grip and stopped the use of the remedies. I can assert on my sacred honor, that at no time since my return has there arisen any desire for alcoholic beverages, and that the thoughts of them causes a constantly growing feeling of repulsion.

As to the presence of atropine in the treatment, Dr. Keeley denies it. All I know is, the eye effects are those produced by atropine, but I can assert this: I have not seen a patient hurt by the treatment, and even if it did crowd a broken down man a little hard occasionally, think what the treatment does—frees a man from the " demon desire," and a man who wants to get free should be willing to take more chances than the Keeley treatment calls for.

Welcome, even atropine, if it will knock out whisky. If you want to do a good act for humanity, judge the Keeley treatment by its results. I know nothing of its components, don't want to, but do know that I am cured, body and mind, of the faintest desire for the old enemy. *C. H. Weaver, M. D., in Dental Register.*

A trouble comes to most of us in working porcelain inlays. In selecting the color for the inlay, you use great care, and find one that is very near perfection. The inlay is ground, and tried in the cavity. You congratulate yourself you have now one that even a dentist will hardly find. The inlay is then cemented into the cavity, and the cement allowed to harden. You now experience a chill down your back when you behold your presumably perfect piece of work two or three shades off color and a failure. I cannot give more than a hint towards the remedy. The trouble lies in the cement used, and will continue to remain there until some of us invent a transparent cement for such work.

Dr. E. C. Blaisdell.

CURRENT ITEMS.

Sir William Gull was asked by a lady if he did not consider experiments on animals as cruel. "Madam," he said, "there is no cruelty comparable to ignorance." *The Humanitarian.*

When a cavity extends under the gums and ligatures have to be pushed up, it can be easily and painlessly done if the gums are first painted with solution of cocaine. *T. Frick.*

I think that the habit of extracting the first adult molars, during the past forty years, has done more to cause arrest of develment of the alveolar ridge than any other thing.

E. S. Talbot.

To moisten corundum wheels, when using in the mouth, twist a piece of wire—either tinned, nickel or aluminum will do, as they are always bright—to the end of which fasten a small bit of sponge. *Dom. D. Journal.*

There can be no question but that much is lost to the student of to-day by exclusion from office training. Many of the little things so essential to correct training are lost sight of in college education. *Henry Barnes.*

The soldering of aluminum which has long been a difficult problem, has been recently solved. By sprinkling the surface to be soldered with chloride of silver, and melting down, the soldering is effected simply and satisfactorily. *Ohio Journal.*

"Study without reflection is waste of time;
Reflection without study is dangerous."

"Sow an act and reap a habit; sow a habit and reap a character; sow a character and reap a destiny."

Tri-chlor-acetic acid should receive a careful investigation as a medicament in dental practice. Its range of applicability, in its various dilutions, is a wide one: stimulant and refrigerant, antiseptic, escharotic, and solvent of salivary concretions about the roots of teeth. It promises to be a valuable addition to the dental materia medica. *Cosmos.*

THINK IT OUT FIRST—It is interesting to note the manner in which science has advanced and art developed. Discoveries and

improvements are occasionally made by accident. But these occurrences are quite rare. The substantial advance in science and mechanics is effected by those who, being prepared by a thorough grounding in fundamental principles and familiar with what is at present known in their department, address themselves diligently to a given problem or requirement, and patiently study it out, applying the previously established principles to their own further extension. Their theories thus being carefully laid down, they proceed to test them by practical application, and to amend them wherever they seem to be deficient. This is following out the well-known precept, "Think first, then try." *Medical World.*

Dr. G. W. Melotte describes a method of welding gold bands for use in crown- and bridge-work, producing a seamless band in which the line at which the ends were joined was no harder than any other part of the band, as it must be when the union is made with solder of lower carat than the band. The process is to bevel the edges to be joined with a short bevel, bringing the parts to perfect adaptation, then apply borax ground in water to the consistence of cream, and with the soft flame of a blow pipe bring the gold to the point of fusion. The molecules of the gold will unite, making a continuous seamless band.

Dr. Morrison, of St. Louis, says of transplanting teeth: It has been my practice for years to transplant teeth to all sockets having good alveolar processes, where I remove a single root or two. With me the process is indispensable, and since Dr. Younger has given us the dry specimen, it is much more convenient, though the fresher the specimen the better. Like a broken bone, security of position and absolute rest are essential. I use a copper wire ligature from the crowns of the adjoining teeth, under or over, as the case may be, and over the edge of the implanted tooth, also securing the ligature in position, and the interdental space, with oxyphosphate, which is worn for six or eight weeks. This ligature is a very excellent thing. I rarely use silk or hemp. I formerly used platinum, or else rubber plates to be removed by the patient, but a neater process consists in making it of one piece of wire encircling the tooth, joining it on each side, and then twisted at the most convenient point, making a figure eight. Then join the free edges of the copper wire and the interdental space with oxyphosphate, allowing the retention to be made perfectly secure while it is in that plastic condition.

UNNECESSARY BURDENS OF THE DENTAL STUDENT.—The dental student has all he can do to "pull through," even under the most favorable circumstances. With a large proportion of the studies of the medical student, he has those pertaining especially to dentistry. To this is added the really practical part of the course, the clinical demonstrations of the infirmary and laboratory. Of the latter there is not enough to begin to furnish the necessary instruction to qualify the student for successful practice. This being the condition of things, instruction should be simplified as far as possible, so as to be readily comprehended. *L. P. Haskell.*

Prosthetic Dentistry cannot be taught in the lecture room. As a rule, too much of the student's time is taken up with details that cannot be comprehended except with an ocular demonstration in the laboratory. Not only this, but much of the instruction is of such a complicated nature as to fail to enlist the attention and interest of the student; in fact, tends to discouragement.

If the lecturer could spend half the time spent in the lecture room, in practical demonstrations in the laboratory, aided by demonstrators of long experience, instead of young and inexperienced ones, the student would graduate far better qualified to practice than under the usual règime.

There is many a graduate who can describe the anatomy of the foot, who is unable to make a successful rubber denture.

It has seemed to me that if the whole of the last month could be given to instruction in prosthetic dentistry, and the students kept in the laboratory steadily at the bench, they would learn four times as much as under present methods.

These conclusions have been reached after forty-seven years' experience in this specialty; seven years as lecturer in two dental colleges, and incidentally in giving clinics in three other colleges, and finally in conducting the Post-Graduate School of Prosthetic Dentistry, with students from nearly every State in the Union and from foreign countries. Most of these students were practicing dentists, many of whom were graduates of dental colleges, and all are united in saying that their month's instruction was far ahead of what they had received in college or from preceptors, in thoroughness and simplicity of methods.

In text-books the student is burdened with methods perplexing and unnecessary. *Ohio Journal.*

We hear sometimes said: "I learn more by my failures than by my successes." This is a false idea, and is often unconsciously a cloak for work that is as loose as this expression is thoughtless. We may learn by our failures, but it is death to the teeth, as the physician's failures are death to his patients; but in either case it is expensive failure to both practitioner and subject. A conscientious, progressive, really successful man will learn more, and become more skilful, by doing the right thing well.

Dr. Blee, of Indianapolis, relates a treatment of causing a partial set of teeth to pass from the stomach through the alimentary canal that might be profitably imitated. Though this was a broken plate, with many sharp ragged edges, and had remained lodged in the stomach some time, the young man successfully passed it by eating plentifully of slippery elm bark, followed by a cathartic. The broken plate came away all tangled up as a ball in the fibres of the bark.

On page 24, ITEMS for January, Dr. Rollins advises vermilion and gutta-percha for the teeth.

Is the doctor aware that vermilion is the pure oxid of mercury, and what would be the result of absorption of this dangerous drug, if applied in such large quantities as suggested?

If rubber with vermilion is dangerous to wear in the mouth, even after vulcanizing, what would be the effect of the drug being applied direct to the teeth as advised? *D. Genese.*

THE BONWILL ANATOMICAL ARTICULATOR.—The Bonwill Anatomical Articulator must be understood to be appreciated, but very few will take the time to study it. The average dentist is content to go on in the old way, making and putting into the mouth "false teeth." They may be all right, and yet all wrong, because of a false articulation. The "Anatomical Articulator" furnishes the means by which the grinding motion of the natural teeth can be imitated in the artificial ones. To properly study the articulator, requires a study of the natural articulation. Take the impressions, make model and place it in the articulator. Now imitate nature in the movements of the lower jaw, this will convince any one of the correctness of Bonwill's views as set forth in "Richardson's Mechanical Dentistry." *John D. Harper.*

INTERNATIONAL REVIEW.

Chips from Dental Workshops Gathered from German, French, Russian, Spanish and Italian Sources.

By George Randorf.

TEETH FROM A MEDICO-LEGAL STANDPOINT.

Dr. Hans Mauczka has just concluded his interesting work on "The Significance of Teeth from a Medico-legal Standpoint," in the *Oest.-ung. Viert. f. Zahn.*, the substance of which has also appeared in the ITEMS for February, and we give here some additional material gathered by the author, which will, no doubt, be of importance to the American practitioner.

INJURIES OF THE TEETH.

Injuries of teeth from external violence are either caused by luxation or fracture.

The incisors are the most exposed to luxation, being the easiest reached by external violence and sitting less solidly in the alveola. The lower incisors, however, are not so easily dislocated, and are often broken on the line of the alveolar ridge. The cuspids, bicuspids, and molars are rarer exposed to luxation.

Fractures occur almost exclusively in the front teeth, while the teeth back of the bicuspids can only be broken with the bone.

From a medico-legal point of view, it may be safely assumed that, whether the injury be from luxation or fracture, the results will be, in the large majority of cases, the eventual loss of the affected teeth, either from immediate effects or by extraction, made necessary later on.

There are many laws in Austria-Hungary punishing offenses of this character, the punishment varying with the degree of permanent injury to the dental organs, and also indirectly to the whole organism.

Teeth, feet, and hands are the trinity of natural weapons which man uses in combats and on other occasions, for attack or defence, when the great number of other tools is not at his disposal, or when, in moments of passion, those especially for that purpose prepared weapons, do not suggest themselves to his inflamed mind.

Tooth as a weapon must then be placed under the definition of a tool, and, namely, in the category of blunt-edged instruments. The injuries produced by a tooth are generally the same as those

from a straight, blunt, and blunt-edged instrument, and may be divided, as to effects, into abrasion, contusion, and wounds.

Abrasion is regarded, in forensic practice, as an injury *sui generis*, for, strictly speaking, it represents the lightest kind of wound from biting, being characterized by a loss of epidermis, chiefly the horny scales.

The most important and constant symptom of contusion is the tearing of vessels and the subcutaneous bleeding resulting from it. The more serious aspect of the case is called suffusion. Swelling is an important symptom in deep-reaching contusion.

When the disfigurement of the organic part caused by teeth is also accompanied by the tearing of the external skin, it is called a *wound*. This often appears either as an open, contused wound, which sometimes resembles the punctured wound, or a lacerated one.

The characteristic impression left by the teeth, the depth of the wound, the number of teeth, etc., are generally conclusive of the mode of attack, and also permit to measure proximately the force used by the assailant.

The punishment for the offense will naturally be corresponding to the injury and circumstances in each case. But the seriousness of the consequences of an attack of this kind is very often complicated by the introduction, through the bite, of microörganisms of the unclean mouth of the ruffianic or " platonic " offender, and still more by direct poisons, such as syphilis. According to Prof. Rollet, there are a number of instances of bites on the lips and tongue, following the impulse of wild hatred or the passion of love overflowing with foam, and which result in the transmission of syphilis.

INJURIES FROM TEETH OF ANIMALS.

The dog bites in a peculiar manner. If he attacks an organ of slight thickness, such as the hand, the impression of the whole set of teeth, or of a large part of same, may be left. It is different, however, when the bitten part of the body has a more roundish form, as the knee. In this case the animal is compelled to bite sidewise. Thus it was possible for Dr. Henry Contague to establish the identity of a robber who was bitten by the small dog of his victim, and who claimed that he had received his wound, though at the same time, but in another place, and from a large Newfoundland dog. The medical expert proved that the assertion of the man was false, and the attempted proof of an alibi was thus demolished. It is to be noted in this connection that the reliance on the symmetrical arrangement of the bites by certain animals, in cases

where other causes are alleged, is the stronger, because irregularities and pathological processes are relatively rare in animals.

The questions which present themselves to the medico-legal expert in such cases are:

1. Does the given injury proceed from an animal? and in the affirmative case, from what animal?

2. What is the degree of injury?

WHAT IS DENTITION?

It seems a new wave of light has been brought to bear on a question which has been regarded as settled by many authorities in both dentistry and medicine. The recent discussions in Europe, portrayed on the pages of the ITEMS OF INTEREST, and participated in by the most learned professors, has re-opened the whole question of incidents of the first dentition. In this country a solid journal, like the *Cosmos*, is still giving its pages to the advocacy of lancing all the time, and the able editorial in a recent issue of the *International*, seems to us to do a little "begging of the question," and avoiding the main issue. The question has not been evidently clearly put. The respective positions of the contending parties will, we think, appear more distinct if the question is put thus: "Is dentition a physiological act or a pathological condition?"

Dr. D. Galippe, of Paris, who sides neither with those denying all incidents due to dentition, nor with those who claim that the labors of dentition provoke pathological phenomena, maintains, on general principles, that "a *normal* child has not and cannot have any incidents of dentition." He says in *Revue Odontologique:*

A child which, before or during this period, presents pathological phenomena, either of the nervous system, the digestive or pulmonary apparatus, supposing that in this moment it does nothing but making teeth, and grows neither in its skeleton nor in any other of its systems, is not a normal child. In nine cases out of ten it will be found that a child having had convulsions the first days of its life, or during the evolution of its teeth, presents, or will present later on, irregularities of the palate, the maxillary arches, or the teeth themselves.

If children have convulsions, it is not because they are making teeth, but rather because they are degenerates, nervous, or, if we prefer, predisposed by heredity, etc. It is in this light that I would urge the medical profession to study with profit the question of incidents of dentition.

In this connection it may be interesting to add that Prof. Magitot, after weighing all the arguments of his opponents, has again appeared at a session of the Academy of Medicine of Paris, reaffirming his belief in the extreme position assumed by him on

that vital question. He refuses to consider the first dentition—a purely physiological act—as a pathological phase, and the newborn as a patient. He adds:

I reject the barbarous practice of incising or excising the gum of a child in the way of dentition. And, appealing to comparative pathology, I can state that domestic animals present in infancy incidents exactly resembling those which in man are attributed to dentition, except that dentition is there always absent. I maintain absolutely my first conclusions, *i. e.*, the absolute negation of *diseases due to dentition*, a tradition or legend serving as an illusory and dangerous cover for pathological conditions whose importance and gravity can thus be neglected.

MENSTRUATION AND THE TEETH.

In a paper on the "Influence of Menstruation on Incidents of Dental Origin," read before the Odontological Society of Paris, Prof. Sauvez shows that, since the augmentation of the mass of blood during pregnancy is known to produce certain influence on the jaws, that similar conditions existing during menstruation, women are more liable to dental troubles at that period.

On general consideration it would seem to follow that the menstrual outflow, disturbing the nervous system and manifesting itself in congestion toward the head and the organs of the chest, would naturally produce a state of least resistance in any tooth susceptible to pulpitis or periostitis.

After observing a large number of cases, the professor sums up his experience as follows:

In her menstrual period woman is subject to affections of teeth, the same as during pregnancy, which are principally caused by the congestion of the pulp or the periosteum.

Generally, woman may be said to be disposed to diseases of the teeth when her uterus is troubled.

The difficulties mentioned occur at the *commencement* of the menstrual period.

The paper concludes with the advice that special care be exercised by practitioners, and that obturation of caries in the fourth degree, for instance, shall not be attempted during the menstrual period.

"Berlin Dental Society," is the latest addition among German dentists. The new feature in this society is a legal protection clause, by which the society pledges itself to assist members in collecting their fees and take charge of any legal matters affecting members.

ANTISEPTIC TREATMENT OF WOUNDS.

Dr. Rohtschevsky, of Russia, seems to be following out the line of investigations instituted by his distinguished teacher, Prof. Uskoff, and in the work recently published (*Centralbl. f. Chir.*), he substantiates the experiments previously made. The author asks himself the question, "Which wounds heal better and quicker: those that have been treated antiseptically or septically, and where lies the difference between wounds thus treated?"

After reviewing the literature of aseptic treatment, the doctor describes his own method of experimentation. Taking, in most cases, the rabbit, he treated a muscle wound either with sublimate (1 : 1000), or a carbol solution (3 per cent.), or he brought it in contact with a 7 per cent. salt solution. Two lines of experiments were conducted with each remedy. In the one, subcutaneous cuts were made in the muscles, and in the other, injections. Everything was conducted amid the most scrupulous cleanliness.

After eighteen and twenty-four hours, two, five, seven and eleven days, a piece of muscle was cut out, with the scar, and after proper treatment embedded again. The results of this interesting operation the author gives as follows:

At the point of the wound itself the removal of the dead tissue was accomplished by the leucocytes, and there was no karyokinesis. On its border and in its immediate neighborhood the process of new formation takes place, which proceeds in the beginning only in the connective tissue. Karyokinesis occurs at the end of the second and the beginning of the third day, and lasts for two, three and twenty-four hours. After eight and twenty-four hours we have in the aseptic wound, which has been treated with a neutral liquid, a solid, good scar. The whole healing process is greatly protracted in wounds treated antiseptically, karyokinesis appearing in this case sparingly and late. While in the aseptic wound the formation of the scar is completed in eight days, the differentiation between the granulating and scar tissue hardly begins in the sublimate wound then.

On the ground of his investigations, which have proven that the antiseptic treatment produces degenerative destructions in the muscle tissue, the author advocates warmly the aseptic treatment of wounds. The avoidance of both chemical and mechanical irritants is the chief problem in the cure of wounds.

INFLAMMATION.

By Dr. P. Grawitz.

"Transformation of tissues in inflammation and its biological significance," was the theme of a discourse by Dr. P. Grawitz, of Greifswald, before the XXI Congress of the German Chirurgical Society, in Berlin. As usual we will give here an abstract only of its contents as published in the *Zahnärztliches Wochenblatt.*

The lecturer first gives a general view of the tissue transformation incident to inflammations, in relation to other alimentary disturbances of the tissues. The old inflammation theory of Virchow ascribes to the tissue cells an active rôle in the cell formation, thus placing inflammation parallel to a series of other disturbances of nutrition which Virchow calls progressive, so that only at a certain stage in the development of the processes is it possible to distinguish what will lead to hypertrophy, inflammation, regeneration or swelling. Cohnheim, on the contrary, regards inflammation as something peculiar to itself, as an alteration of the blood-vessels, so that the process of departure of the white blood corpuscles is from the very beginning different from hypertrophy and swelling. The author then speaks of the transformation of fibrous substance of the tissues into globules and cells, and demonstrates by means of illustrations taken from fresh skin wounds, connective tissue pus, and pus fibrinous peritonitis, that this fibre transformation is equally germane to all these processes, and that therefore inflammation is but a link in the chain of disturbances of nutrition.

In reference to the serous membranes, the doctor finds that the fibrinous deposits which have been regarded for many years as exudations, are formed by a collection of ganglia of connective tissues of the pleura, peritoneum and pericardium, by which the fibres can be transformed at once into fibrin, as well as after having first become cells. Sometimes the fibrinous transformation prevails, at other times that of cells; in the latter case a suppurative fusion takes place. It has also been shown that the same phenomena take place in the cartilages and bones. Now, when later on globules and cells are again formed from the original substance, it is not to be accepted that the new cells are identical in shape and size with those which appear in the embryonal formation, as only molecules remain from the globule and cell substance, though their grouping can be very diversified.

The complicated tissues, fat tissues, muscles and nerves are not produced by single cells, but each fat cell and muscle fibre is

a composite structure formed by the fusion of several cells, which in a certain stage of development contains the original components in such a form as to leave no trace of its cellular composition.

In all kinds of disturbances, of nutrition in its inflammation, healing, swelling and atrophy, these highly organized formations are to a degree dissolved into single building stones, so to speak, the tissues become again cellular, as they have been in the embryonal period, only the form and size of the cells is very oscillating.

Thus it follows from comparative observations of various tissues that all alimentary disturbances produce a retreat of the original substance in a stage which they have once traversed at the time of formation of the tissue; inflammation is a link in the series of these retrogressive phenomena, and not from the beginning; but it depends only on the last process, whether the newly formed cells are destined for regeneration, formation of swelling, pus fusion or disruption.

A PECULIAR MOTIVE FOR SUICIDE.

Miss K. was for some time the fiancée of a young municipal officer in Germany, who wanted to use his vacation in bringing to his parents, who lived in the country, the choice of his heart. It was hard at the beginning to get the permission of the unwilling parents, but the more blissful seemed to Emma the approaching day of departure. Miss K. had hardly packed the most necessary things, when a stranger appeared in her room, and, with the significant words: "I am executor of the law," instantly took possession of the set of false teeth which lay in the water and which shone like a natural row of pearls. She took these "pearls" on installments, but forgot to pay for some time, and her misfortune came as a result of legal proceedings. Now, it seemed clear to her that she could not live after that blow, and so, as soon as the officer left, she decided to end her existence. She transformed the bed sheet into a rope which she fastened on the window crossing. Fortunately, in her haste, she forgot to pull down the window shades, so that her actions were seen by people living on the opposite side. They notified the owners, and an entrance was forced into the room where the tired-of-life-victim was rescued alive. The young girl had lost consciousness, and it took some time to call back to existence the despairing maid who, as it were, "without teeth nearly bit into the grass."

OUR MONTHLY GOSSIP.

By W. E. Blakeney, D.D.S.

A SATURATED solution of oxalic acid on peroxid of manganese will make ozone.

IF THERE were no troubles to talk about, some people would be almost silent.

DR. F. H. LEE claims to have had good results in anchoring crystal gold with oxiphosphate.

THERE IS no organ of the body that has such a feeble hold on life as a dental pulp.

"A MAN of no convictions," says the *Christian Union*, "ought to be, and usually is, out of a job."

THE OHIO *Dental Journal*, always instructive and interesting, starts the new year much improved in "make up" and appearance.

IN MIDDLE life both the tubules and fibrilli become small, and in old age the extremities are found obliterated.

DR. A. C. HUGENSCHMIDT believes that living teeth in adults, as well as in children, can give rise to an alveolar abscess. [What do others think?—ED. ITEMS.]

THE SENSITIVENESS of teeth may be relieved by the use of chlorid of zinc—ten grains to the fluid ounce of water.

FOR DRYING out root canals, Dr. L. J. Mitchell uses a solution of bichlorid of mercury, which he considers far superior to alcohol.

ALL DENTAL instruments coming in contact with syphilitic patients should be placed in boiling water at least half an hour before they are again used.

FOR NEURALGIA in the face *Hall's Journal of Health* recommends a mustard plaster applied to the elbow; for neuralgia in the head the plaster should be applied to the back of the neck.

HALL'S *Journal of Health* says that a sure cure for inflammatory rheumatism is one ounce of pulverized saltpeter, in a pint of sweet oil. Bathe the parts affected.

THE *Cincinnati Enquirer* says: To whiten the hands melt a pound of white castile soap over the fire with a little water. When melted, perfume as desired, with any extract, and stir in half a cupful of common oatmeal.

DR. D. G. BRINTON, the ablest ethnologist in this country, contends that the claim is a mistake that diseases and disturbances of the nervous system become more common with advancing civilization, and are most frequent in the races of the highest culture.

THE *Therat. Monat.* recommends a solution prepared by dissolving five parts of menthol in eight parts of chloroform as being of value in controlling the pain from an exposed nerve. It is applied on cotton inserted in the cavity of the aching tooth.

"I HAVE got to find," says Dr. C. Harker, "the first instance of a previously exposed pulp due to caries having in itself, after capping throughout physiologically, the theory which the capping process promises, or rather, I should say, the result which the conservative advocate promises for the theory."

"WITH VERY few exceptions," according to Dr. Benjamin Lee, "the bacteria which can do us harm are those, and those only, which come from the bodies of men and animals afflicted with disease." Most of the literature which has accumulated on this subject may be regarded as "Much Ado About Nothing."

IN ORDER to lessen the pain from arsenical applications, Dr. G. C. Richards recommends a "free exposure of the pulp, and the use of a mixture of an equal quantity of antipyrin with the arsenic, as the physiological action of the former in diminishing blood pressure relieves the conjestion of the vessels caused by the arsenic, and therefore diminishes pain.

"NITRATE OF SILVER," says Dr. A. M. Holmes, "is a resolute remedy; it cauterizes the surfaces of the soft tissues to which it is applied, but does not penetrate them as does carbolic acid, nor involve the entire pulp in an inflammatory condition, tending to destroy the whole mass, as does arsenious acid."

"IN THE discussions of our Society meetings," says the editor of the *Dental Practitioner*, "there will be found statements of cases that are on their face impossibilities. And yet," continues the editor, apologetically for these incongruities, "the relators did not mean to mistake the conditions—they were only careless observers and heedless generalizers." Dr. Barrett knows how to compound and administer sugar-coated pills—some of which are bitter, for all of that.

"THE BEST indication that a tooth-root is in a proper condition to be filled," Dr. Barrett contends, "may be found in its dryness. * * * If there is any moisture the fact will be made apparent by thrusting a smooth broach as far as possible into the root, and

wiping it off on the rubber-dam. The presence of moisture indicates that further treatment of the root is demanded."

IN A PAPER entitled "Anchorage of Gold Fillings," by Dr. S. W. Palmer, the writer claims that "to obtain good results from filling it is important that the structure and condition of the dentine be understood, as how to insert a gold filling. There must be harmony between the two, or failure will be the result. At least three conditions are necessary to produce permanent gold fillings; normal dentine, accessible cavities, and good manipulation."

EXCEPT FOR the removal of adherent and other calcific deposits Dr. Charles Harker does not ream canals more than may be done with ordinary bud-shaped excavating burs. Canals, he says, which may not be reamed without great danger of going through the side of the root or breaking off the reamer may be well filled without reaming. He uses nicely-tempered slender broaches, which adapt themselves without the danger of breaking.

RELIEF FOR TOOTHACHE, it is said, can be had by the following simple preparation: Melt white wax or spermaceti, and add equal parts carbolic acid crystals, stir well till the crystals are dissolved. While still hot immerse thin layers of carbolized absorbent cotton. Dry them, and when required for use a small piece may be stripped off and slightly warmed, when it can be inserted into the hollow tooth, where it will solidify. It is claimed that the ease produced by this method is great.

DR. EMIL C. W. SANDREY, Vienna, Austria, in a communication to the *Dental Practitioner*, expresses great astonishment that the Baume method of treating pulps immediately after using the arsenic acid is not known in America. The method consists simply in applying a very small amount of borax in the pulp chamber, covering it with any material, which will not harden in contact with the borax, and then fill as desired. The doctor has used this method for three years, in over three hundred cases, with only four failures.

DR. ADAMS, at a late meeting of the Union Dental Society, said: "There is no certain way to get men into societies except by law;" and that "we should have such legislation as would compel every dentist to join a society." It might be possible to legislate topers out of the dram shop, but it would require a very stringent law to legislate them into church during the hours of worship. Dr. Adams ought to know that a law, such as he suggests, would be arbitrary, tyrannical and absolutely useless. Our societies want only volunteer membership.

QUESTION BOX.

With Replies From Our Best Dental Authorities.

[*Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.*]

Question 76. *What is your opinion of a system of home study, arranged for the practicing dentist, like that conducted by the Post-Graduate Dental Association, of the United States, designed to lead up through such a course to an honorary degree?*

I think a Post-Graduate course for dental home study is an excellent thing, and I heartily endorse it.

A. F. Davenport, D.D.S., North Adams, Mass.

I would encourage any system of study, "home" or otherwise, that would advance and place dentistry on a higher plane of professional attainment, excellence and usefulness. Onward and upward should be the motto of all. *B. F. Arrington, Asheville, N. C.*

Home study is advisable to all persons practicing dentistry, but entirely impracticable with a view of obtaining an honorary degree with such study only. So great has been the advance in college requirements that honorary degrees are out of the question. *Isaac J. Wetherbee, Boston, Mass.*

The method of home study in dentistry and collateral science, as recommended and prescribed by the Post-Graduate Dental Association, of the United States, will place within the reach of all an opportunity for study, improvement, and advancement in the profession that cannot be realized otherwise; it also affords the dentist, who cannot absent himself from his practice to attend a regular course at college, the privilege of keeping pace, to a great degree, with his chosen profession.

The system of reading, as arranged, will be advantageous to both old and young, and as its educational council is composed of gentlemen well known in the profession I think it worthy of encouragement.

S. B. Hartman, Fort Wayne.

It should be the aim of every dentist to increase his knowledge and manipulative ability. "Knowledge is power;" the higher his attainments, the more power he commands, which is an honor and profit to himself and his patients. It is our duty to give the public our best service. Therefore no man in the profession should pass unheeded an opportunity to better his skill. From what I can learn of the Post-Graduate Dental Association, of the United States, I firmly believe it will fill a long felt want, and give to the many dentists of this country the largest amount of valuable information, for the smallest amount of money, of any thing in existence.

Ira B. Archer, North San Juan, Cal.

A grand idea! There is no reason why we should not endeavor to improve during our leisure moments. If we wish to keep at the head of our profession, we must read. A course of reading such as has been proposed is, I think, a grand scheme. "Learn as if you were to live forever" is my motto. This course of reading is a golden opportunity.

Malcolm W. Sparrow, L.D.S., Toronto, Canada.

It is laudable to offer encouragement to the practicing dentist, in any legitimate way, to become more competent. In this respect our societies are one of the best mediums. However, so far as issuing degrees is concerned, we should recognize but two forms: the one which represents a thorough course of study in a dental college, and the honorary degree to such men who have gone beyond the usual course by adding something of very great importance to the profession, bearing on originality. The multiplication of degrees may become so cheap as not to be worth the paper they are written on. Issue only those that are necessary as a protection to the public, or a reward for original thought, investigation, or discovery. I believe that good dentists, like good artists, are born—not made, and do not require any extra inducement to study. *C. H. Land, Detroit, Mich.*

Question 77. *Patient, twenty years of age, has temporary molars in lower jaw occupying the place of second bicuspids. They are firm and in good condition, but require more space than the bicuspids, and I am thinking of removing them to give more room. The third molar and lateral incisors have not erupted, nor is there any sign of the incisors in the process. Patient is healthy and teeth are of good form and structure. Will the bicuspids erupt if the temporary molars are extracted?*

Extract temporary molars without delay. *B. F. Arrington.*

If the arch is likely to be crowded, I should extract the temporary molars; and if the bicuspids do erupt, should think it very fortunate; still, I consider their eruption as extremely doubtful.

A. F. Davenport.

I should extract the deciduous molars, as they do not belong there Even if the second bicuspids do not erupt, the teeth will be less crowded I should not remove the deciduous lateral incisors if there is no indication of permanent ones—I refer to the superior laterals. It is not certain that the bicuspids will erupt. *Isaac J. Wetherbee.*

Considering the age of patient, as there is no indication of the incisors erupting and the temporary teeth are in a firm and good condition, I would not remove them till I saw some definite indication of approaching permanent teeth. Should the teeth be extracted and the bicuspids not erupt for two or three years, there would not, in all probability, be space enough for them. *S. B. Hartman.*

This appears to be a case of no second dentition of the incisors, and perhaps the second bicuspids. I would extract the deciduous molars, owing to the crowded arch, and await results. Time will tell. I had a patient, twenty. two years of age, with deciduous right superior first molar firm and in good condition. I extracted it, and the first bicuspid erupted within six months *Ira B. Archer.*

I do not believe the bicuspids will erupt. I have seen several instances, of different ages, where the deciduous teeth have remained. One patient

was fifty years of age; tooth loose. I removed it, and found no root. The space never filled, nor did the tooth erupt. At twenty years of age I do not believe the bicuspids will erupt. If deciduous teeth are all right, I would leave them. If the teeth are crowded, I would certainly remove them, as the space will soon close by the remaining teeth gradually coming together.

Malcolm W. Sparrow, L.D.S.

I have watched the development of several cases similar to this during the last twenty years, and have known some of them to loosen and come out, but no permanent teeth filled their place. In some of my patients' mouths I have observed them doing good service for twenty years, and my opinion is that seldom in such cases do we find even a germ of the permanent tooth. It would, therefore, be the most practical to add to in preference of taking away—at least, till we are convinced a second tooth is likely to take its place. With gold caps and bridging, the missing teeth may be restored. *C. H. Land.*

Question 78. *Patient, twenty-nine years of age, has an upper deciduous cuspid occupying the place of the permanent one. It is firm, but much shorter than the neighboring permanent teeth. The permanent cuspid seems to be in position just above the deciduous tooth. If the latter is extracted, will the former come down in place?*

Extract the deciduous cuspid. *Ira B. Archer.*

Remove deciduous tooth. The permanent cuspid will take proper position and be all right in course of time. *B. F. Arrington.*

I do not think the permanent cuspid will erupt if the temporary tooth is extracted. I should try and preserve the temporary cuspid.

A. F. Davenport.

If the permanent cuspid was going to erupt, the deciduous one would get loose. As it is firm, I doubt if removing it will cause the permanent cuspid to take its place. Yet there is a possibility of it coming down in the way that a broken root grows down for want of pressure from occlusion.

Malcolm W. Sparrow.

If the deciduous cuspid is removed, the permanent one will eventually take its place, and that, too, by natural process. I have removed several, and have in no case been disappointed. It may require from three to five years to find it in line with other teeth. *Isaac J. Wetherbee.*

This is simply a case for regulation, and may be corrected by removing the temporary tooth, cementing a gold cap on the bicuspid—provided with a gold loop through which a piece of thread may be passed—then by suitable appliances the tooth may be slowly drawn into place. See Farrar's work on "The Irregularities of the Teeth." *C. H. Land.*

Question 79. *Why do the upper teeth decay more than the lower ones?*

The lower jaw is movable, while the upper is stationary; this favors the teeth of the lower jaw, and if we investigate the minute reasons we find fric-

tion during the process of mastication, and the action of the muscles, while talking, favors the lower, while the suctional action of the tongue helps dislodge acid and ferment.

Various glands bathe the lower teeth with saliva, diluting acid or chemical formations—gravity robs the upper teeth of their dilutants, uniting them with the secretions of the lower jaw.

We notice the teeth near the glands, if perfectly formed and saliva is in a normal condition, are often free from decay, while the others are freely attacked by caries.

If you will stop to consider, many reasons may be found in answer to your question. The lower has one very weak tooth, and that is the first molar. In our practice we extract about thirteen lower first molars to one upper. The first tooth we ever lost was a first lower molar. Who can tell why?

Question 80. *What are the conditions necessary to advise the use of gum teeth, and should we use both upper and lower?*

Rubber or celluloid gums are apt to discolor, while the rubber at best is a poor imitation of the natural gums. Plain teeth have many advantages over gum teeth in articulation and artistic arrangement, but in many with short lips, the gum teeth are preferable, as the porcelain is free from discoloration, and has a more natural gum color. It is not always necessary to use them for upper or lower sets in the same mouth, though less rubber is required with gum teeth, and this with added weight favors them somewhat for lower plates.

Question 81. *I read much concerning arranging artificial teeth. Every one says: "Don't let the six anterior teeth of upper jaw hit the lower ones." I would like to know what is to be done when a patient wants an upper set, though they have but the six front teeth on the lower jaw, or with but three teeth on the lower jaw, and will not consent to having a partial under set, but kick unmercifully if inserted under these conditions and do not "fit" all right?*

The above refers to full sets or partial posterior sets. If the upper jaw is prominent and the lower has a good natural under bite, the teeth can be so arranged that the lower ones strike shoulders or the plate, and do the service of natural ones in many cases.

If the teeth must strike on or near the points, and the patient objects to an under partial or full set, explain that the teeth can be used as an ornament but not for mastication.

Question 82. *What can be done with a Logan crown after the porcelain has broken away, leaving the pin sticking fast in the gold?*

A Bonwill crown can be attached to the pin with cement or amalgam, or the pin can be drilled out and replaced with a Logan crown. Logan crowns are not fastened with gold as you suppose, but the root probably has a gold cap under which is the plastic filling by which it is anchored.

EDITORIAL.

WHO ARE RICH?

Wealth consists more in what we are than in what we have; and the wealth of what we are and have consists infinitely more in what the world is to us, than what we are to the world, and in what we may technically call our own. The miser that dries up all the sweet juices of his nature in hugging his millions, and does not enjoy the wealth about him, because he cannot place it within his vaults, is not nearly so rich as he whose normal appetites and pure passions make every good thing a luxury, and the wealth of others and of all nature his own by enjoyment. There is much more in that declaration of the Saviour than is generally grasped, "Blessed are the meek, for they shall inherit the earth." In his mild, soft, gentle spirit he is the opposite of the miser, yet he "possesses all things," and he hears Paul say, "Let the brother of low degree glory in his high estate." He is happy with only what he needs, yet all the world waits on him, and the rich, and the wise, and the good vie with each other in making him still happier. In the most important sense he possesses all they possess, and enjoys all they enjoy. They are his servants. They bring to the place he chooses stone and timber, skill and muscle, and build him a house, and supply it with conveniences, and load his table with "food convenient for him." In return, all he has to do, is to be happy in making others happy, by filling his little nitch in the great wheels of fortune. Would he travel over mountain and vale? The roughest country is made smooth for his highway, the best carriages are at his service, with steel rails to drive them on, and liveried servants to attend him. Would he pass on the waters? Quickly it is carpeted by a geni that enables him to walk forth as a king on its billows, as pleasantly and as securely as if in his own parlor; and that luxurious palace moves out on the roughest sea with men of refinement and skill to take him wither he will, and at his will return. Music halls, art galleries and museums are opened for his instruction and amusement. Gardeners cultivate for him

the loveliest flowers and the richest fruits. The mines of the earth, the wheat of the field, and "the cattle on a thousand hills" are his, because they are his Father's—all do their best to make him happy. The birds sing for his enjoyment, the wild fields are strewn with flowers for his perfume, the very sands are sparkling pearls for him, and every thing is tinged with a glow from heaven for his delight. The great sun comes every day a hundred millions of miles to warm him, the moon smiles on him, and the twinkling stars sing and blink and laugh for his pleasure—all because he laughs back as he does the little work as God gives it to him to do.

How free from care is such a child of such a Father, and yet how rich in even this foretaste of his inheritance. By a simple life of faithful work, and restful trust, he "inherits the earth" and he "inherits the kingdom."

Do you still ask, who are rich? Would *you* thus have "all things work together for your good?"

How clumsily the blundering dentist stumbles along in his difficult work, seeking unmerited success. He complains of his awkward instruments and of his fractious materials—of the unmanageableness of everything but himself. They do not obey him because he does not know how to command them. He is the servant of circumstances and the master of nothing. How he fumes and frets at his hard lot, when he ought to see that he is only spoiling a good plowman to make a poor dentist.

Baalam was a good prophet, but when he went aside from his legitimate business to get Balak's riches, by pretending to do what he could not, the very ass reproved him. In his determination to go forward he bruises his shins, and in his foolish anger he abuses the very beast that carries him; but he neither hears when the donkey speaks, nor turns back when the angel of his conscience warns him. He persists in a journey on which he was never sent, and he makes a pretense of goodness he has left behind. He protests disinterestedness, while his chief anxiety is for money not fairly earned, and a reputation that tickles his vanity.

HOW TO ATTAIN SKILL.

While heedless and bungling, stumbling along thoughtlessly and carelessly, do you look for success? That geni never comes at such a call, nor can it be caught by such a step. Beginning quite down at the simplest things, and doing these well, we must come up to the greater with such cautious steps as to make each foot-mark a measured tread.

The multitude go at such hap-hazard strides they leave everything in confusion. They jolt against each other, striving for place and power so wildly and indefinitely, they deserve only what they get—disappointment. The man who would have permanent success must get skill, and for this he must first get caution, deliberation and thoughtfulness, as the foundation for patience, accuracy and tact, and each thing must be done well. Then he shall hear the approving plaudit of his Master, "Well done, good and faithful servant; thou hast been faithful over a few things, I will make thee ruler over many things." It is the continued painstaking step by step that brings perfection in character and work, and final skill and success.

A dentist in Vermont writes:

"I would like to hear from the editor, and others in the profession, in regard to the filling and extracting of teeth absolutely without pain."

We answer: We know of no one who professes to fill and extract teeth "absolutely without pain" by any local anesthetic. If some dentists and patients did not demand so much to satisfy them, advertisers, and workmen who really have something good, would be more modest in their claims. Some want everything absolutely perfect, whereas they themselves, and nothing they have, are "absolutely" perfect. I really do not know who to refer you to for a process for "filling and extracting teeth absolutely without pain," unless you are willing to work on "absolutely" dead men.

WHAT WINS?

It is not the effort of an hour that wins. A special struggle may reveal possibilities, but it is long, persistent, unremitting study and work that bring great attainments. There is no jumping into greatness. Money may buy position, but will not give us the ability to retain it; influential friends may boost us, but cannot give us strength to stand alone; we may step into the shoes of rich uncles, but they may pinch our feet, and soon wear out; even the lore of the schools may be ours, *but*, only patient labor, self training, and harmonious development bring permanent success. By no other means can we attain renovation, preparation and maturity. It is by such a discipline of mind, body and passions we acquire accuracy, precision and penetration, discretion, wisdom and skill, breadth, strength, and power. Discipline forges these into nobleness, honor, and success.

In view of the multitude of young men crowding into our ranks, it may relieve the anxiety of some to say, "Oh, well, there will be the survival of the fittest," and thus dismiss the subject, or even be encouraged to go on with the recruiting. But this "survival of the fittest" is often a deceitful theory. The fittest are often thrust aside by the unprincipled charlatan. Our best thinkers and best workmen are often laughed at by the blatant coxcomb as he passes by to take the ears and the dollars of a gullible public.

And still our dental colleges are multiplying, and our graduates are ground out by thousands, where a few years ago we thought hundreds a great number. We encourage all of them that "there is plenty of room at the top." There may be for the unconscionable trickster who is ready to knock down the more meritorious that he may climb up on their backs.

Really, are our leaders doing justice to new comers? Would it not be better to turn more than half of them back to follow the plow? At any rate should we not require a more advanced stage of preliminary attainment?

An esteemed contemporary says in his New Year's address to his readers: "Dentists can be better in the year to come than they have been in the year just past—if they try. By being better we do not mean better in a moral sense. We have nothing to do here with a plea for morality among our fellows."

But there is such a close relationship between our work and our morals that when our morals decline our work suffers. It is difficult to improve the delicate manipulations of one hand while the other is smirched and made unsteady by dissipation. Physicians, and dentists, and ministers must have both hands clean to do acceptable work. We are bidders in the market for support, and good work and bad morals clash. If a man comes with a saloon or a brothel, his character is expected to be bad, for he banters only to men of bad character; but if we would have the patronage of clean men and women we must be clean ourselves and do a clean business.

No horizon is so narrow as that in which the sun rises and sets on self.

The World's Columbian Dental Congress will be held August 14th–19th. There are more than a hundred Congresses to be provided for. This has necessitated a large increase of space.

As the World's Congress Art Palace is now planned there will be two large audience rooms, capable of accommodating three thousand persons each, and more than twenty smaller halls, which will seat from three hundred to seven hundred persons each. Thus providing for thirty-six large meetings and three hundred and sixty smaller meetings in a single week, by holding morning, afternoon, and evening sessions. Among the other Congresses assigned to be held in parallel with the Dental Congress, are those of Pharmacy, Medical Jurisprudence and Horticulture. For all these the accommodations will be adequate. Every thing in the nature of an exhibit is required by the Exposition authorities to go to Jackson Park. The Congresses deal not with things, but with men; not with matter, but with mind.

Many of us are looking too high and too far for greatness. He is a great man who can control himself; he is great who can attract by his goodness, and helpfulness, and sympathy; he is great who is so gentle and kind, so winning and lovable, so simple-hearted and teachable, as to be childlike. None of us have far to go to find these, though they may have far to come to find us. They are to be had by the beckoning; they will read from afar our very desires and fly to us; they come begging to nestle in some warm spot where they can grow and become a force. They soon begin to soothe our temper, clean our heart, control our passions and regulate our mind. They are as fairies in our hair brushing out the snarls, on our face smoothing out the wrinkles, and in our mouth cleansing it of corruption; the very breath is purified of whiskey and tobacco and filthy communications. The clothes are dusted, the features are polished, and the whole character and demeanor is made lovable. This is true greatness.

For years we have persisted in a change of the spelling of various words, such as bromin, chlorin, iodin, glycerin, cocain, oxid, sulfur, etc., and we have been laughed at and ridiculed by our conferrees till the publishers of the ITEMS have advised us to fall in with the multitude, and spell in the good old way.

But lo! a few chemists have assembled in convention and sanctioned these changes! Now we should be unfashionable if we did not fall in with them. How fickle is public opinion, and professional opinion, too. But this time it is on the side of simplicity of spelling, and we say, thank you. The time is not far distant when other changes will demand public attention. Geografic writers have already made their demands.

Before you succeed, and especially when you fail, many will call you a fool; if you succeed they will call you a genius. So that a prominent difference between the fool and the genius is fail ure or success. Be willing to be called a fool many times, if finally you can be called a genius.

NOTES.

Dr. L. J. Mitchell finds a reliable cocain solution to be three parts of cocain with two parts chloral. For an injection use a ten per cent. alcoholic solution, adding a drop of oil cinnamon.

* * *

Berlin now counts 140 graduated dentists; 25 graduated in America having the title of D.D.S.; among the latter 6 ladies, and 293 "dental artists," of which 23 pursue outside avocations.

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It is after all the strong that succeed and the weak that fail. But this strength must be more than the vigor and endurance of the muscles. There must be a strength of will and mind, and a strong, enduring purpose, that sets the whole man aglow with spiritual light, and holy passion, and scintillating thoughts, and sends him through this dark world a fire brand of energy.

* * *

Bro. Hodgkin gives us this month a disertation on the poison ous effects of rubber plates. Let every one read it with care, for it probably contains all the defense of this position to be found. It may be quite convincing to some; others will still scout the whole argument.

Our position is well known. We do not believe there was ever a case of poisoning from a rubber plate.

* * *

Dr. M. L. Rhein, of New York, writes us that he is still improving the facilities for using methyl as an anesthetic. He says: "Its value to me and to such of my colleagues who have introduced it into their office has steadily increased, so that to-day it has become to many of us indispensable. A great many men have confounded the chloride of ethyl with it, and Whites have undoubtedly sold many of said tubes on reputation of the methyl. The chloride of ethyl does not take its place in any way, and in my hands it is valueless alongside of the methyl. The chloride of ethyl by its volatilization will produce a reduction of temperature to about 20° above zero in about two minutes. The methyl in five seconds will freeze mercury in bulb of thermometer, and produce reduction equivalent to about 70° below zero. This is the point of difference. It is merely the difference of intensity of cold that makes one valuable, because its intelligent application is painless, and the other valueless."

Many an under plate with good adaptation to the jaw and good occlusion is loose and unmanageable because it does not extend sufficiently on around the ramus. This tuberosity has nearly always a depression on the inner side, so that if the impression had been good and the plate covers this inner depression on both ends of the plate, it will go into place with difficulty and will be removed with quite as much difficulty. Also, in forming the upper plate, special care should be had to carry it over and outside of the posterior protuberances.

* * *

The seeds of great men are growing up all about us. Yes, we each have within ourselves the possibilities of greatness. The reason one grain of wheat grows to be a strong stalk, bearing plentifully, while another, by its side, is slender and puny, bearing little, is not so much in the character of the seed as in the vigor of its growth. We may each grow to become symmetrical, stalworth *men*, if we will; but if we loiter along the way, neglecting to improve the native qualities within us, and the advantages about us, we shall come up poor, sickly stalks, a disgrace to the wheat field.

* * *

"DR. PETER OLIVER, who lived in England during the early part of the eighteenth century," says the *Dental Office and Laboratory*, "tells of seeing a carved cherry stone on which were carved the heads of one hundred and twenty-four popes, kings, queens, emperors, saints, etc. Small as they must necessarily have been, with a good glass the heads of the popes and the kings could readily be distinguished from those of the queens and saints by their mitres and crowns." It seems to me the doctor's imagination was wonderfully alastic when he told this incredible story.

* * *

DR. A. M. HOLMES has had a happy experience with Canada balsam, cut in chloroform, for lining cavities in teeth. He has discovered by persistent tests that when cavities were painted with this preparation it not only served as a retainer, but the chloroform evaporating, there was left a hard, impervious coating between the filling and the tooth, which effectually closed the mouths of the dental tubuli and formed a non-conductive layer that materially modified shocks from thermal changes. In preparing it, he simply evaporates the balsam to the point of dryness, and then dissolves it in enough chloroform to reduce it to the proper consistency.

FOR OUR PATIENTS.

Full many a tooth for ever is lost
  By delaying its work till to-morrow;
The minutes of sloth have often cost
  Long years of toothless sorrow.

Eliza Cook.

We need not fear to face to-morrow
  If to-day we do our best;
Persevere in present duties
  And to God resign the rest.

Trouble not about the future,
  "Now" is all that calls for care—
We will find the strength when needed
  For the burdens we must bear.

Susie M. Best.

INTOXICANTS AND DEATH.

Another dentist has fallen; fallen as a fool falls. The pit was seen yet he walked into it. He saw others fall before him, yet he pressed on to the same destruction. Is not this suicide? He reeled as one delirious, he talked as one insane, he acted as one mad. But he voluntarily, deliberately, persistently brought it on himself, and then fell into the grave of his own digging.

'Mid silence and tears, we laid him low. As the cold earth covered him, the hollowness of the sound echoed of blasted hopes.

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His was a bright intellect; a moral nature, fine and delicate, was his. And what a heart of love! It made every feature glow with its pure, tender passion; its overflow changed a spot in the desert to an oasis, where sprung up luscious fruit and beautiful flowers. A paradise was his home; while beside many a path to poverty and pain, there peeped out dainty and blushing blossoms to kiss his feet.

A demon came to that quiet retreat. Delicious as nectar was the tempting potion he offered; biting and poisonous were the living germs that lurked within it. In the cup they were too insignificant to attract attention; warmed and fed and nourished within, they grew, and multiplied, and matured into hideous vipers,

knawing and consuming the very vitals. The poor man died—dying, he died; for those murderous creatures did their work slowly, at brain, and heart, and soul.

Look! Why does yonder tree prematurely drop its precious fruit? "An enemy hath done this." A tiny egg was buried at its root; now a worm is there eating. So within this great intellect devilish serpents crawl their slimy lengths along. Once they were germs in the enticing draught, now they are hideous creatures that feed on all which made that brain vigorous, till it sends forth only sickly vamperings and wild ravings.

Why, in yonder tree, do the leaves grow sere, and the branches wither? That worm is knawing at the heart. So, at the center of the life of our loved one, venomous serpents are drinking the rich juices of a noble nature. The hand falls palsied.

Look again at the tree; once so noble and strong, so vigorous and fruitful, now dead. Hark! The woodsman calls, "cut it down; why cumbers it the ground?" So, in that frame, "fearfully and wonderfully made," though long struggling against the inevitable, the fatal draught has done its work. The very soul, insulted and degraded by whisky, and finally pawned for it, has been given over to the destroyer. The remains, we bury. "How has the mighty fallen!" Speak not his name.

Would you escape his doom? Would you prevent that shame which permits not the lips to name the dead? Would you keep from the heart which mourns the weight that breaks it? "Look not thou on the wine, when it is red, when it giveth its color in the cup, when it moveth itself aright. At last it biteth like a serpent and stingeth like an adder."

In the same county where sits the lonely widow and the dependent children of this fallen dentist,—so destitute, so comfortless, so heartbroken,—there lives the stricken families of four others who were of our profession, all gone the same road, to the same doom from the same cause, within the same year, with the same warning.

And yet the living will not take it to heart. With so many, who but yesterday, were the peers of the best of our profession—and though they knew its degrading, its cruel, its deadly effect—the poisonous potion is drank as a sweet draught. Then, ever and anon, the whirling brain idiotically cries for more. The corrupted blood thirsts to be fed by the same liquid fire that burns it dry, and the fountains of the heart,—Oh, the dreadful desolation!

Fellows, there is death in that bowl! Drink it not. Come to the sweet waters of life! *T. B. W.*

A CHANCE FOR EVERY TOOTH.

Sir Andrew Clark, President of the Royal College of Physicians and Surgeons, is said to have told Mr. Gladstone that he had one mouth but thirty-two teeth, and that each mouthful of food should receive thirty-two bites in order to give every tooth a chance. A correspondent of *The Companion* writes that he was recently cognizant of an excellent proof of the truth of this statement.

A sallow-faced, unhappy-looking man came to Doctor B——'s office one day when the writer chanced to be present. He wanted some medicine for dyspepsia. Among the questions the doctor asked, "How long a time do you usually spend at dinner?"

"I dunno exactly," replied the patient; "ten or fifteen minutes, I guess."

"Does your food taste good?" Doctor B. asked.

"That it does," was the reply; "but half an hour after I've eaten I'm near dying with distress."

"Do you drink much with your food—tea, coffee or water?"

"A pretty considerable amount," answered the man.

"Yours is a grave case," said the doctor, "but I can help you if you'll follow my directions."

Doctor B—— gave the man a dark-colored mixture in a bottle, and said, "Now, it is of the utmost importance that this medicine be taken properly. Put a teaspoonful into your cup of tea or coffee at each meal, stir it thoroughly, and with each mouthful of food take a very small sip, and then chew, chew, chew, in order to mix it completely with the food. Do this and report to me in a week."

Two weeks later I saw this dyspeptic again, but I scarcely recognized him, he was so much improved in looks.

"That medicine of yours works like a charm," he said to the doctor. "I've about forgotten that I have a stomach."

"That's good," responded Dr. B——. "Continue taking it in the same way for three months, and you'll be a well man."

Then, as the man went out, Doctor B—— said to me:

"The whole story of that man's cure is in the word *mastication*. It is merely what I said to him—chew, chew, chew. But he wouldn't have believed it without the medicine, which was the simplest. The man was bolting his food, and I stopped it. I've cured hundreds of dyspeptics in a similar way. Indeed, most dyspeptics might cure themselves if they would give every tooth a chance—thirty-two bites to a mouthful, with two for every tooth missing."

Youth's Companion.

A QUEER CASE OF RELATIONSHIP.—A case tried in the Cumberland County Court yesterday showed that Sarah Simpkins, of Vineland, was the wife of her son-in-law and the mother-in-law of her own husband and grandmother to the children of her husband. Josh Simpkins, her former husband, married her daughter Isabel by a former husband, he having also children by his wife Sarah. Josh therefore becomes the husband of his step-daughter and the step-son-in-law of his own wife, as well as her son-in-law, step-brother-in-law of his own daughter and step-grandfather of his own children. He is also his own step-father-in-law. He and his "wife" Isabel have five children, and his "wife" Sarah nursed her daughter Isabel when each was born.

Isabel is a step-mother to her own sister, and step-grand-daughter to her husband, and also her own step-mother, being the wife of her step-father.

"I guess we've got into the wrong office," said a lady to her companion.

As the dentist came into the reception room and asked what he could do for them, the lady replied:

"I only want my teeth looked at to see what they may need." This done, and they left.

"It is no use, Lizzie," said the one who had come to have work done, "I could not have allowed that man to work in my mouth. He was too dirty, and did you notice what a smell the office had, and how shiftless everything looked?"

"Yes," said her companion, "there was nothing inviting, and much that was repulsive. Suppose you go over to my dentist?"

They went. Here everything was neat and clean; the dentist was well dressed and polite, and everything was attractive. As soon as he could leave his patient, then in the chair, he came to them. Greeting his old patient pleasantly, he asked what he could do for her friend. They were detained till his first patient was dismissed, when he conducted his new patient to the chair. After two hours' work she was dismissed with an appointment for another day.

Is this an exceptional instance? We believe not. Somewhat similar instances occur frequently. Appearances go a great way with all of us, and still more with the women. They judge almost by instinct what a dentist is by what they see about him; by the very atmosphere he carries with him.

NOTICES.

The Ohio *Journal* (thanks for the abbreviation) comes to us in a beautiful new dress, and much improved every way. My! what work must have been put on the first number of this year! And we are promised quite as much vim and enterprise in succeeding numbers.

At a meeting of the Faculty of the Pennsylvania College of Dental Surgery, held January 9th, 1893, the following resolutions were adopted:

Resolved, That in the death of Dr. Alonzo P. Beale, who for thirteen years filled the position of Demonstrator and Lecturer in the Pennsylvania College of Dental Surgery, the Faculty recognize the loss not only of a teacher of rare ability, but of a man whose admirable personal qualities endeared him to all with whom he was associated.

Resolved, That a formal expression of the heartfelt sympathy of the members of this Faculty be conveyed to the family of their deceased coadjutor, with the assurance that their profound regret at his untimely loss will be fully shared in by every student and alumnus of the institution.

(Signed) HENRY LEFFMANN,
Secretary of Faculty.

The St. Louis Dental Society will hold a three days' clinic, March 15th, 16th and 17th, 1893. A general invitation is given for all dentists to attend. The committee having charge of clinic already promise an interesting meeting. Drs. A. H. Fuller, J. Warren Wick, and W. M. Bartlett, compose the committee.

William Conrad, Corresponding Secretary.

The annual meeting of the St. Louis Dental Society was held at the office of Dr. J. B. Vernon, January 3d, 1893. The following officers were elected for the ensuing year:

President, Dr. DeCourcy Lindsley; Vice-President, Dr. J. Warren Wick; Corresponding Secretary, Dr. William Conrad; Recording Secretary, Dr. J. G. Pfaff; Treasurer, Dr. Henry Fisher.

Committee on Publication:—Dr. L. A. Young, Dr. P. H. Isloeffel, Dr. C. L. Pepperling.

Committee on Ethics:—Dr. H. M. Baird, Dr. A. J. Prosser, Dr. M. C. McNamara.

Committee on Membership:—Dr. W. N. Morrison, Dr. C. L. Hickman, Dr. J. H. Spalding.